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**Annual Report**

of the

**Department of**

**Health**

of

**The City of New York**

for the

**Year 1919**

N.Y.C.VITAL STAT.  
ANNUAL REPORT, DEPT. OF HEALTH:

1919


DATE











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ANNUAL REPORT  
OF THE  
DEPARTMENT OF HEALTH  
OF  
THE CITY OF NEW YORK



FOR THE  
CALENDAR YEAR 1919

NEW YORK CITY  
1920

M. E. BROWN PRINTING & BINDING CO.  
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BOARD OF HEALTH

---

*Commissioner of Health and President of the Board*

ROYAL S. COPELAND, M.D.

*Health Officer of the Port*

LELAND E. COFER, M.D.

*Police Commissioner*

RICHARD E. ENRIGHT

*Secretary to the Board*

CHARLES L. KOHLER

## DIRECTORY OF DEPARTMENT OF HEALTH.

### OFFICES.

Headquarters: 505 Pearl Street, Manhattan.....Telephone, 9400 Worth.  
Borough of The Bronx, 3731 Third Avenue.....Telephone, 1975 Tremont.  
Borough of Brooklyn, Flatbush Avenue and Willoughby Street.....Telephone, 4720 Main.  
Borough of Queens, 372-374 Fulton Street, Jamaica, L. I.....Telephone, 1200 Jamaica.  
Borough of Richmond, 514-516 Bay Street, Stapleton, S. I.....Telephone, 440 Tompkinsville.  
Office Hours—9 a. m. to 5 p. m.; Saturdays, 9 a. m. to 12 m.

### HOSPITALS FOR CONTAGIOUS DISEASES.

Manhattan—Willard Parker Hospital, foot of East 16th Street. Telephone, 1600 Stuyvesant.  
The Bronx—Riverside Hospital, North Brother Island. Telephone, 4000 Melrose.  
Brooklyn—Kingston Avenue Hospital, Kingston Ave. and Fennimore St. Telephone, 4400 Flatbush.  
Queens—Queensboro Hospital, Flushing Avenue and Lotts Lane. Telephone, 2600 Jamaica.

### LABORATORIES.

Diagnosis Laboratory, Serological Laboratory, 505 Pearl Street. Telephone, 9400 Worth.  
Research Laboratory, Chemical Laboratory, Vaccine Laboratory, foot of East Sixteenth Street. Telephone, 1600 Stuyvesant.  
Antitoxin Farm and Laboratory, Otisville, N. Y.

### BABY HEALTH STATIONS.

#### Manhattan.

- |                       |                        |                       |                     |
|-----------------------|------------------------|-----------------------|---------------------|
| 1. 172 East 3d St.    | 8. 224 West 63d St.    | 15. 348 East 74th St. | 22. 73 Cannon St.   |
| 2. 513 East 11th St.  | 9. 326 East 11th St.   | 16. 205 East 96th St. | 23. 95 Suffolk St.  |
| 3. 306 Avenue A.      | 10. 114 Thompson St.   | 17. 209 Stanton St.   | 24. 206 Madison St. |
| 4. 443 1st Ave.       | 11. 315 East 112th St. | 18. 343 Pleasant Ave. | 25. 214 Monroe St.  |
| 5. 225 East 107th St. | 12. 244 Mulberry St.   | 19. 108 Cherry St.    | 26. 289 Tenth Ave.  |
| 6. 241 East 40th St.  | 13. 508 West 47th St.  | 20. 197 Hester St.    | 27. 95 Forsyth St.  |
| 7. 174 Eldridge St.   | 14. 78 Ninth Ave.      | 21. 27 Suffolk St.    | 28. 2155 Fifth Ave. |

#### Brooklyn.

- |                     |                       |                        |                      |
|---------------------|-----------------------|------------------------|----------------------|
| 1. 268 South 2d St. | 7. 359 Manhattan Ave. | 13. 604 Manhattan Ave. | 19. 698 Henry St.    |
| 2. 621 Fourth Ave.  | 8. 49 Carroll St.     | 14. 179 Bedford Ave.   | 20. 594 Sutter Ave.  |
| 3. 208 Hoyt St.     | 9. 76 Johnson Ave.    | 15. 296 Bushwick Ave.  | 21. 167 Hopkins St.  |
| 4. 144 Navy St.     | 10. 233 Suydam St.    | 16. 994 Flushing Ave.  | 22. 592 Park Ave.    |
| 5. 2346 Pacific St. | 11. 323 Osborn St.    | 17. 176 Nassau St.     | 23. 165 Ten Eyck St. |
| 6. 184 Fourth Ave.  | 12. 107 Dupont St.    | 18. 129 Osborn St.     | 24. 49 Amboy St.     |

#### The Bronx.

- |                       |                      |                     |                     |
|-----------------------|----------------------|---------------------|---------------------|
| 1. 511 East 149th St. | 2. 428 East 133d St. | 3. 354 Webster Ave. | 4. 2380 Hughes Ave. |
|-----------------------|----------------------|---------------------|---------------------|

#### Queens.

- |                              |                              |                                   |
|------------------------------|------------------------------|-----------------------------------|
| 1. 114 Fulton Ave., Astoria. | 2. 22 Maspeth Ave., Maspeth. | 3. 753 Onderdonk Ave., Ridgewood. |
|------------------------------|------------------------------|-----------------------------------|

#### Richmond.

689 Bay Street, Stapleton, S. I.

### CLINICS FOR VENEREAL DISEASES.

#### ADVISORY CLINICS.

##### Manhattan.

Main Clinic, 505 Pearl Street..... Week days, 9 a. m. to 12 m.

##### Brooklyn.

Prospect Clinic, Fleet and Willoughby Streets..... {Daily except Sunday, 9 a. m. to 12 noon.  
Monday and Friday, 8 p. m. to 9 p. m.







DEPARTMENT OF HEALTH,  
CITY OF NEW YORK,  
505 PEARL STREET, BOROUGH OF MANHATTAN.

---

NEW YORK, October 30, 1920.

*To His Honor*

*The Mayor of the City of New York:*

SIR—On behalf of the Board of Health I have the honor to transmit herewith, as required by Section 1168 of the Charter of the City of New York, a report of all the operations of the Department of Health of the City of New York for the year ending December 31, 1919.

Very respectfully,

ROYAL S. COPELAND,

Commissioner of Health.



# REPORT OF THE DEPARTMENT OF HEALTH CITY OF NEW YORK, FOR THE YEAR 1919

## BUREAU OF GENERAL ADMINISTRATION

During the year 1919, in addition to the transaction of routine business required by the Charter, the Board of Health inaugurated a campaign against Drug Addiction, with a course of control and treatment; and, in cooperation with the Federal and State Governments, extended the care and treatment of venereal diseases in the various boroughs of the City.

Numerous amendments to the Sanitary Code were made, the most prominent of which was the licensing of undertakers.

### *New Sections and Amendments to the Sanitary Code.*

- Sec. 117 Proprietary medicines. Amended Feb. 25, 1919.
- Sec. 171 Sale of oysters. Amended April 29, 1919.
- Sec. 1 Definition 47—Pestilential Disease (Drug Addiction).  
Adopted June 22, 1919.
- Sec. 142 Protection of food, amended July 24, 1919.
- Sec. 228 Noise from bells, gongs, etc. prohibited. Adopted Aug. 20, 1919.
- Sec. 225 Heating of occupied buildings. Amended Dec. 11, 1919.
- Sec. 229 Loud noises from automobiles prohibited. Adopted Dec. 17, 1919.
- Sec. 43 Sextons; to register with the Department of Health. Adopted  
Dec. 11, 1919.
- Sec. 46 Business of undertaking regulated; permit required. Adopted  
Dec. 11, 1919.
- Sec. 106 Wood alcohol poisoning to be reported. Adopted Dec. 31, 1919.
- Regulations governing the conduct of poultry slaughter houses. (Reg. 1).  
Amended February 4, 1919.
- Regulations governing transportation of offal, butchers' refust, etc.  
Amended February 25, 1919.
- Regulations governing the removal and disposal of dead bodies of human  
beings. (Reg. 15). Amended March 27, 1919.
- Regulations governing the handling, storing, offering for sale, etc. of food  
and drink in retail stores. (Reg. 28). Amended June 24, 1919.
- Regulations governing the conduct of poultry slaughter houses. (Reg. 1).  
Amended July 24, 1919.
- Regulations governing docking of vessels arriving from an infected port.  
Amended Dec. 17, 1919.
- Regulations governing the business of undertaking. Adopted Dec. 31, 1919.
- Regulations governing the disposal of dead bodies. Amended Dec. 31, 1919.

# ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

Regulations governing the isolation of persons affected with an infectious disease. (Reg. 5). Amended Dec. 31, 1919.

## Personal Service.

During the year many of our employes who were in the military and naval service of the United States returned to duty, which placed the department on a more efficient basis, their positions having been filled by temporary war substitutes.

### DISTRIBUTION OF EMPLOYES.

BUREAU.	Physicians.	Nurses.	Laboratorians.	Inspectors.	Clerks.	Others.	Total.
General administration....	36	....	2	9	145	212	404
Sanitary.....	7	....	....	67	6	73	153
Records.....	6	....	....	....	34	26	66
Child hygiene.....	143	326	....	....	18	76	563
Preventable.....	161	194	....	25	45	43	468
Food and drugs.....	....	....	15	117	18	18	168
Hospitals.....	33	176	2	1	24	559	795
Public health education...	2	....	....	....	3	3	8
Laboratory.....	6	....	91	1	12	67	177
Total.....	394	696	110	220	305	1,077	2,802

During the year a new system of keeping the personnel records of the employes of the entire department was inaugurated. Heretofore, the records were kept on cards and in books, and to get a complete record it was necessary to resort to both sources and then perhaps to the Auditor's records for a correct and complete one. The system which has been started, and which is progressing rapidly, eliminates the objectionable and irksome task of going from one place to another for the desired information, in so far as it contains the employes' complete record. In this connection, the various bureaus of the department were requested to furnish the employes' correct addresses, which are an important part of this record. To accomplish the task of changing the personnel system, it being a large and important one, a force of clerks have been assigned, and when completed it will be a valuable asset to the records of this office and the department.

## Appropriation for the Year 1919.

### Appropriation and Special Funds, Including Transfers:

Personal Service .....	\$2,885,269.57
Other than Personal Service .....	1,206,994.28

### Revenue Bond Funds:

Miscellaneous .....	30,608.07
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\$4,122,871.92

# BUREAU OF GENERAL ADMINISTRATION

## Expenditures, including unliquidated obligations:

Personal Service .....	\$2,854,194.41
Other than Personal Service .....	1,181,462.28
Misc. Revenue Bond .....	29,957.62
	<hr/>
	\$4,065,614.31

## Statement of Cash Receipts Turned Over to the General Fund of the City.

Sales of Antitoxins .....	76,579.42
Sales of Virus .....	13,643.24
Pay patients, U. S. Government .....	158,156.00
Pay patients, City Hospitals .....	5,900.50
Pay patients, Sanatorium, Otisville .....	616.00
Transcripts .....	49,590.50
Bulletin subscriptions .....	61.92
Waste paper .....	393.09
Auction Fat .....	223.70
Miscellaneous Refunds .....	330.64
	<hr/>
	\$305,495.01

## Laboratory Products.

Cash receipts from sales of antitoxins and virus .....	90,222.66
Distributed free—antitoxins and virus .....	127,512.15
	<hr/>
	\$217,734.81

## Purchase and Storage of Supplies.

Requisitions approved for purchase of supplies and equipment .....	3,603
Contracts for supplies, equipment and repairs executed—270 .....	\$684,204.41
Orders issued for purchase of supplies, equipment, etc.	
Open market and contract—8217.....	\$1,235,041.91

Due to the strict economy exercised by the department in the purchase of supplies, materials and equipment, the department managed to carry on its increased activities within the appropriation, without the issuance of revenue bonds to augment the department's appropriation.

By strict supervision in the distribution of postage, the savings for the year 1919 shows a large increase over that of 1918 and 1917, as noted below:

	1917	1918	1919
Amount of postage distributed	\$39,652.82	\$39,573.74	\$28,125.35
a saving of \$11,527.47 over 1917, and of \$11,448.39 over 1918, notwith-			

# ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

standing that there was a greater amount of mail distributed during 1919 than during any previous year.

## *Division of Complaints*

### SCHEDULE OF COMPLAINTS RECEIVED, RECORDED AND DISPOSED OF DURING THE YEAR 1919.

	Manhattan.	Bronx.	Brooklyn.	Queens.	Richmond.	New York City.
Complaints pending December 31, 1918.....	588	255	91	100	13	1,047
Complaints received (citizens).....	22,341	7,417	11,171	3,687	1,045	45,661
Complaints received (original).....	3,340	726	2,653	2,047	505	9,271
No cause for action (complaints).....	10,898	3,769	4,310	1,544	271	20,792
Abated by personal effort (complaints).....	2,903	1,357	3,893	1,452	382	9,987
References.....	7,334	1,552	2,363	560	183	11,992
Returned for notice or order.....	3,686	1,154	3,229	1,870	710	10,649
Complaints pending December 31, 1919.....	1,448	566	120	308	17	2,459
Notices and orders pending December 31, 1919.....	462	352	672	448	159	2,093
Notices and orders issued.....	3,686	1,154	3,189	1,870	703	10,602

## *Division of Construction and Repairs*

Notwithstanding the excessive cost of labor and the vast increase in the cost of materials, the appropriations for maintenance and repairs to Department Buildings, by careful consideration, was kept within the amount allowed. This was principally accomplished by department laborers making all minor repairs and replacements wherever possible, and by careful inspection and elimination of all unnecessary improvements.

During the year, four milk stations and one tuberculosis clinic were removed to more desirable locations, and where the greater need existed for such stations and clinic—in some instances at reduced rentals.

The following new hospital buildings were completed and occupied during the year:

Helps' Dormitory Building—North Brother Island.

Venereal Building—Riverdale Hospital, North Brother Island.

Helps' Dormitory and Kitchen Building—Kingston Avenue Hospital, Brooklyn.

Diphtheria Pavilion—Kingston Avenue Hospital, Brooklyn.

The entire construction of these buildings was supervised by employees of this division, to see to it that all plans and specifications were complied with, and that materials as required were used in construction.

In the spring, specifications were prepared for decorating and painting thirty-three Baby Health Stations. Contracts were awarded, and interior and exterior of stations were painted, where necessary.



# BUREAU OF GENERAL ADMINISTRATION

Lease of the Department Headquarters' Building, at 139 Centre street, expired on September 30, 1919, and the Sinking Fund Commission, on recommendation of the Board of Health, wisely refused to approve the new lease at a greatly increased rental. The Department moved to the Hallenbeck Building, owned by the City, on the Court House site, thus saving a rental of at least \$60,000 per annum.

## WELFARE DIVISION.

### *Examinations and Re-examinations of Employees Made During the year*

Examinations .....	287
Re-examinations .....	665
Men examined .....	68
Men re-examined .....	61
Women examined.....	219
Women re-examined .....	604

### *Defects or Impairments Found.*

	Men.	Women.
Cardiac impairment.....	3	45
Pulmonary impairment.....	3	37
Overweight.....	2	28
Underweight.....	..	48
Indigestion.....	..	17
Constipation.....	1	46
Naso-pharyngeal impairments, including enlarged tonsils and deflected and perforated nasal septa.....	2	43
Defective vision.....	2	89
Hearing.....	..	26
Defective teeth, including pyorrhoea.....	15	97
Enlarged thyroid.....	..	14
Flat or weak feet.....	..	23
Tenderness found over region of liver and gall bladder.....	..	4
Possible gastric ulcer.....	..	2
Hernia.....	..	2
Gastropotosis.....	..	5
Movable kidney.....	..	3
Tenderness found in right iliac region.....	..	8
Menstrual disorders.....	..	25
Hypotension.....	2	87
Hypertension.....	3	49
Anaemia.....	..	34
Minor skin affections, including psoriasis, chromophytosis, eczema, etc.....	..	15
Found suffering from petit mal.....	..	2
Bone deformities.....	4	6
Unclassified affections.....	2	12
No evident physical impairment.....	14	64
Number needing advice.....	?	675
Number referred to physician or institution.....	..	100
Number ordered to report for observation until physical condition had improved.....	..	75
Number who reported regularly until physical condition had improved.....	..	68
Emergencies treated during morning office hours.....	73	



## ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

### LAW DIVISION

A comparison of the legal work performed in the courts, for the years 1918 and 1919, shows a material increase in the number of actions instituted and disposed of, as well as the amount of fines imposed by the Criminal Courts of the City, during the year 1919.

In the District Magistrates' Courts, where minor violations are considered, particularly those relating to spitting in public places, smoking in subways, the use of unclean glasses in serving and dispensing drinks, the use of common drinking and eating utensils in the preparation and dispensing of food and drink, the maintenance of minor and aggravating nuisances, etc., this increase was very marked. In 1918, a total of 4,894 cases were disposed of, and \$6,853 in fines imposed; while in the year 1919, 10,424 cases were disposed of, and \$15,645 collected in fines.

A comparison of the results obtained in the Municipal Term Courts, which try and dispose of complaints involving the more serious violations of the health law, establishes the fact that a marked increase occurred during the last mentioned year. While the total number of cases only increased from 2,299 cases disposed of, in the year 1918, to 2,613, in the year 1919, the fines imposed by the courts amounted to \$39,626, from \$21,950 in 1918.

It will be noted, further, from this brief summary, that the activities of the department in the enforcement of the health laws, during the year 1919, have received the approval of the courts, as evidenced by the results obtained.

It might be mentioned that, before a criminal or civil action is instituted against any person, firm or corporation, the evidence obtained by the representative of the Department is carefully reviewed, both by the administrative official of the branch of the Department charged with the enforcement of the provision of law alleged to have been violated, and by the Law Division so that trivial, technical, and unnecessary violations would not be presented to the court, where results could be obtained through the machinery of the Department. This procedure has proven beneficial to the Department, as well as to those against whom complaints have been filed. The interests of persons so complained of are fully protected, because no complaint is submitted to the courts until it has been thoroughly considered.

It must, also, be borne in mind that the results obtained through the courts reflect in a great measure the activities of the Department. The enforcement of the food, drug, and sanitary laws of this City, as embodied in the Sanitary Code establish the effectiveness of the administration of the Department of Health. Constant vigilance must be exercised in detecting the unscrupulous in the nefarious traffic of selling, or using unwholesome, deleterious, and fraudulent foods and drugs. The convictions obtained, as disclosed in the attached tables, furnish adequate evidence that the Depart-

## BUREAU OF GENERAL ADMINISTRATION

ment is effectively prosecuting such individuals. This conclusion is equally supported in the enforcement of the Sanitary Laws, particularly those relating to the conditions under which the residents of New York City live. The Heat Ordinance may be particularly mentioned as having afforded relief to thousands who, without its aid and support by the courts, would have suffered grave inconvenience, and possible danger to their lives and health. The enactment of this Ordinance, the courts held, is within the powers vested in the Board of Health, and tended to accomplish the purpose of its enactment.

It might be mentioned, that no landlord of a building was summoned to court until all other means were exhausted by the Department, in its endeavor to have heat supplied to tenants, and it was only as a last resort that landlords were charged with violating the provisions of this Ordinance. In nearly every instance where a criminal complaint was presented to the courts, a conviction was obtained and heavy fines imposed.

The particular bureau or division of the department charged with the enforcement of particular sections of the Sanitary Code will refer to more important prosecutions in their respective reports.

### DISTRICT MAGISTRATES' COURTS. REPORT OF DISPOSITION OF CASES FOR THE YEAR ENDING DECEMBER 31st, 1919.

To Municipal Term.....	2
To Special Sessions.....	33
Fined.....	7,786
Sentence suspended.....	2,311
Prison sentences.....	18
Acquittals.....	54
Dismissals.....	220
Total cases.....	10,424
Total amount of fines.....	\$15,645

## ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

## MUNICIPAL TERM COURTS.

REPORT OF DISPOSITION OF CASES FOR THE YEAR  
ENDING DECEMBER 31st, 1919.

	Part I.	Part II.	Total.
	Manhattan and The Bronx.	Brooklyn.	
Dismissed (nuisance abated or complaint withdrawn before trial).....	116	48	164
Held for Special Sessions.....	17	7	24
Fined.....	1,200	573	1,773
Sentence suspended.....	362	235	597
Jail sentence.....	..	..	..
Acquitted.....	46	9	55
Total prosecutions instituted.....	1,741	872	2,613
Amount of fines imposed.....	\$25,281	\$14,345	\$39,626

## COURT OF SPECIAL SESSIONS.

REPORT OF DISPOSITION OF CASES FOR THE YEAR  
ENDING DECEMBER 31st, 1919.

	Manhattan.	Bronx.	Brooklyn.	Queens.	Richmond.	Total.
Dismissed (nuisance abated or complaint withdrawn before trial).....	8	1	..	..	..	9
Acquitted.....	..	..	1	..	1	2
Jail sentence.....	..	..	..	..	..	..
Sentence suspended.....	10	2	1	..	3	16
Fined.....	5	5	..	2	8	20
Total prosecutions instituted....	23	8	2	2	12	47
Amount of fines imposed.....	\$775	\$475	..	\$150	\$325	\$1,725

Section of Code Concerned.	116.	122.	139.	144.	151.	152.	159.	163.	170.	225.	Total.
Fined.....	..	..	2	..	1	..	4	11	1	1	20
Sentence suspended....	..	..	2	4	2	3	3	1	..	1	16
Prison sentence.....	..	..	..	..	..	..	..	..	..	..	..
Dismissed.....	2	1	..	..	2	2	2	..	..	..	9
Acquitted.....	..	..	..	..	..	..	..	2	..	..	2
Total.....	2	1	4	4	5	5	9	14	1	2	47
	..	..	\$300	..	\$25	..	\$400	\$725	\$25	\$250	\$1,725

## BUREAU OF GENERAL ADMINISTRATION

MUNICIPAL TERM COURT.  
REPORT FOR YEAR ENDING DECEMBER 31, 1919.

Section.	Manhattan and The Bronx							Brooklyn.				Totals.	
	Held for Special Sessions.	Fined.	Sentence Suspended.	Prison Sentence.	Dismissed.	Acquitted.	Total.	Amount of Fines.	Total.	Amount of Fines.	Total Cases.	Total Amount of Fines.	Total Amount of Fines.
10	2	2	...	...	2	...	4	\$45	...	...	4	\$45	...
13	1	1	...	...	...	...	1	15	...	...	1	15	...
19	...	...	1	...	...	...	1	...	...	...	2	...	...
36	3	...	...	...	...	...	3	...	...	...	3	...	...
53	1	1	...	...	3	...	4	10	...	...	5	10	...
58	3	3	3	...	5	2	13	160	...	25	18	185	...
75	1	1	...	...	...	...	1	5	...	...	1	5	...
110	...	...	...	...	8	...	...	...	...	...	...	...	...
116	6	6	3	...	...	2	19	345	...	290	32	635	...
118	...	...	...	...	...	...	...	...	...	...	...	...	...
124	4	4	...	...	...	...	4	240	...	...	4	240	...
129	...	...	...	...	...	...	...	...	...	15	1	15	...
137	...	...	3	...	...	1	4	...	...	...	4	...	...
139	1	9	1	...	2	4	17	1,020	6	205	24	1,225	...
144	...	1	...	...	...	...	...	20	1	3	2	23	...
147	...	...	...	...	...	...	...	...	1	15	1	15	...
149	3	3	...	...	1	...	4	30	...	...	4	30	...
150	...	...	...	...	...	...	...	...	...	...	...	...	...
151	2	101	58	...	17	1	179	1,638	138	92	2	5,193	...
152	5	149	78	...	21	4	257	4,340	155	49	1	8,035	...
154	...	...	...	...	1	...	2	...	...	...	...	...	...
155	...	38	20	...	3	...	61	438	12	3	...	...	...
156	...	7	2	...	2	...	11	170	13	11	1	501	...
159	1	138	31	...	2	...	180	947	19	425	36	595	...
163	2	541	128	...	8	2	715	9,473	187	135	212	1,082	...
170	...	1	1	...	19	25	2	25	1	5,039	965	14,512	...
183	...	1	...	...	5	1	7	10	5	175	3	25	...
197	...	...	...	...	...	...	...	...	...	...	26	185	...
211	...	...	...	...	1	...	1	...	...	5	1	5	...
212	...	...	...	...	...	...	...	...	...	...	1	...	...
225	2	9	...	...	2	1	14	1,700	1	250	18	250	...
	...	...	...	...	...	...	...	...	...	25	...	1,725	...

MUNICIPAL TERM COURT.  
REPORT FOR YEAR ENDING DECEMBER, 1919—Continued.

Manhattan and The Bronx.										Brooklyn.							Totals.		
Section.	Held for Special Sessions.	Fined.	Sentence Suspended.	Prison Sentence.	Dismissed.	Acquitted.	Total.	Amount of Fines.		Held for Special Sessions.	Fined.	Sentence Suspended.	Prison Sentence.	Dismissed.	Acquitted.	Total.	Amount of Fines.	Total Cases.	Total Amount of Fines.
235	..	..	..	..	4	..	4	..		..	..	..	..	1	..	1	..	5	..
238	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..
240	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..
242	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..
251	..	..	..	..	1	..	1	..		..	..	..	..	1	..	1	..	2	..
273	..	..	..	..	1	..	1	..		..	..	..	..	..	..	..	..	1	..
274	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..
276	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..
280	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..
281	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..
282	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..
283	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..
284	..	..	..	..	3	..	3	..		..	..	1	..	..	..	1	..	4	..
287	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	..
322	..	..	1	..	..	..	1	..		..	..	..	..	..	..	..	..	1	..
325	..	2	..	..	..	..	2	75		..	..	..	..	..	..	..	..	2	75
330	..	1	..	..	1	..	2	15		..	..	..	..	..	..	..	..	2	15
331	1	181	31	..	6	3	222	4,560		..	22	11	..	1	..	34	425	256	4,985
	17	1,200	362	..	116	46	1,741	\$25,281		7	573	235	..	48	9	872	\$14,345	2,613	\$39,626

## SANITARY BUREAU

The Executive Office maintains a supervision over the work performed by the Division of Sanitary Inspections, and the Division of Food and Drug Inspections, Manhattan.

### *Various Activities.*

The 34 lodging houses maintained for soldiers and sailors during the war, were discontinued during the early months of the year.

Many inspections were made of the large number of private stands erected along Fifth Avenue, from which were viewed the parades of the U. S. A. Divisions returned from the late war, as many of those built on vacant lots had toilet facilities (latrines) installed for each sex, and those in charge were directed to have lime on hand to sprinkle over the contents. The city built public stands, covering the entire sidewalk on the east side of Central Park, from West 60th to West 110th Streets. The day following each parade, inspectors were detailed to see that all comfort stations, and the spaces beneath all the stands along the entire route of the parade, were thoroughly cleaned. The Mayor's Committee sent 25 laborers to thoroughly clean spaces beneath the stands on Central Park sidewalk.

### *Stables.*

During the latter part of March, a complete census of the stables in the borough was made, and it showed a decrease of 17,828 horses, since 1917. Whenever horses are destroyed at a stable fire, a patrolman of the Health Squad is detailed to the premises until all dead animals have been removed to the offal dock and all offensive material (burned hay, straw, etc,) removed from premises.

The stables have been kept under close surveillance to prevent fly breeding and insure sanitary conditions.

Labor strikes, at various times during the year, made it difficult for the manure dealers to ship manure from the city, or to obtain an adequate supply of scows or cars on which to load same. This office maintains an alphabetical street list of all stables in the borough, and also a list of the manure dealers, and these lists show from which stables each dealer removes manure. Each dealer was notified that manure could not be allowed to accumulate in stables, but must be removed at least twice each week, even if necessary to store temporarily on scows or cars or on their docks. At various times, labor conditions compelled temporary storage on docks.



*Refuse Removal.*

Labor strikes prevented, at times, the prompt removal of ashes and garbage by the Department of Street Cleaning, and nuisances developed when ashes containing considerable putrescent material were used to fill on the river front, from W. 87 to W. 93 Sts. and when flat scows loaded with garbage were held many days on the waterfront, before same was relayed to bottom-dumper scows, and taken to sea. As a result of these conditions many complaints were received by this division.

*Heating and Dwellings.*

During several winters the Department of Health was besieged with persons, who lived in so-called steam heated apartment houses, whose own apartment had no means of providing a reasonable temperature within the rooms when, for any cause, the central heating plant had ceased to function or was inadequate.

As the question involved seemed to bear directly on public health and comfort, and was a subject to be considered under the police powers devolving upon the Department of Health, the Board of Health, at its meeting of October 17, 1918, passed a resolution, which became Section 225 of the Sanitary Code:

Section 225. Heating of Occupied Buildings. It shall be the duty of every person who shall have contracted or undertaken, or shall be bound to heat, or to furnish heat for any building, or portion thereof, occupied as a home or place of residence of one or more persons, or as a business establishment where one or more persons are employed, to heat or to furnish heat for every occupied room in such building, or portion thereof, so that a minimum temperature of sixty-eight (68) degrees Fahrenheit may be maintained therein at all times. Provided, however, the provisions of this section shall not apply to buildings, or portions thereof, used and occupied for trades, businesses, or occupations where high or low temperatures are essential or unavoidable.

Under this section it was made a misdemeanor for anyone who had contracted to furnish heat, for any residential premises, to fail to maintain a temperature of 68 degrees F. in the occupied living rooms thereof.

As an immediate result of the adoption of this section the Sanitary Bureau of the Department received thousands of complaints, although the winter of 1918-19 was not a severe one. The ordinance was fruitful of good results during this time, and was upheld by the lower courts as reasonable.

To meet the legal technicalities advanced by owners of houses complained of, the sanitary inspectors were provided with thermometers, which had been tested in our laboratory in comparison with a U. G. Government



## SANITARY BUREAU

tested and sealed thermometer. These thermometers were found to be not only serviceable but reasonably accurate (within 1 or 2 degrees F.) for the purpose required.

It was found, after a year's trial of this ordinance, that there were several instances in which no expressed contract could be established requiring the heating of the premises. Landlords were quick to take advantage of this defect and plead it, when summoned to provide heat. Again, the tenant in many instances became unreasonable and attempted to compel the owner to provide heat during all hours of the twenty-four.

In view of these, and of other defects within the knowledge of our legal department, the Board of Health at the meeting of December 11, 1919, amended Section 225 of the Sanitary Code to read as follows:

"Section 225. Heating of Occupied Buildings.—It shall be the duty of every person who shall have contracted or undertaken, or shall be bound to heat, or to furnish heat for any building, or portion thereof, occupied as a home or place of residence of one or more persons, or as a business establishment where one or more persons are employed, to heat, or to furnish heat for every occupied room in such building, or portion thereof, so that a minimum temperature of sixty-eight (68) degrees Fahrenheit may be maintained therein at all such times. Provided, however, the provisions of this section shall not apply to buildings, or portions thereof, used and occupied for trades, business, or occupations where high or low temperatures are essential and unavoidable.

"For the purpose of this section, wherever a building is heated by means of a furnace, boiler, or other apparatus under the control of the owner, agent, or lessee of such building, such owner, agent, or lessee, in the absence of a contract or agreement to the contrary, shall be deemed to have contracted, undertaken, or bound himself or herself to furnish heat in accordance with the provisions of this section.

"The term 'at all such times' as used in this section, unless otherwise provided by a contract or agreement, shall include the time between the hours of 6 a. m. and 10 p. m. in a building, or portion thereof, occupied as a home or place of residence, and during the usual working hours established and maintained in a building, or portion thereof, occupied as a business establishment, of each day wherever the outer or street temperature shall fall below (50) degrees Fahrenheit.

The term 'contract' as used in this section shall be taken to mean and include a written or verbal contract."

During the winter months, over 4900 complaints were received in relation to "lack of heat" and these were investigated by the regular field force.

## ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

### *Vessels from Plague Infected Ports.*

Lists of vessels arriving from infected ports (bubonic plague) were received daily from the Health Officer of the Port of New York, and a patrolman of the Health Squad was sent to enforce official regulations on all vessels that had not been fumigated, and these vessels were kept under observation while moored to dock or pier to insure compliance with regulations.

The clerical force of the Sanitary Division was reduced by sickness, special details, and vacancies, to a point where it was necessary to keep several of the field force in the office almost continuously; there was also a vacancy in the district force, and thus depleted, the field force performed the extra work, caused by the unusual conditions noted above, and made 66,626 inspections during the year.

### *Mosquitoes.*

In the Borough of Manhattan, no citizen's complaints were received in relation to mosquitoes, although climatic conditions were unfavorable.

Inspection, following complaint, showed that decaying vegetable matter was causing offensive odors in Loch Pool in Central Park, and reference was made to the Park Department and nuisance abated.

All possible breeding places in Central Park were kept under observation, and measures taken to eliminate breeding of mosquitoes when found, as at Duck Pond, where steps are being taken to make a permanent improvement.

### *Prevention of Rabies.*

To assist in preventing spread of rabies, there were printed for the Department, during March, 100,000 copies of a folder containing information for dog owners, such as, "licenses required for all dogs in cities having population over 800,000"—"sections of Sanitary Code relating to rabid and vicious animals, and the proper muzzling of dogs," and "how enforcement of same would prevent spread of rabies." Of these, 70,000 copies were sent to A. S. P. C. A., to give a copy with each new license, or renewal of license, during 1919 (68,500 last year); 20,000 copies to veterinarians in Greater New York; 500 copies to stores selling dogs; 2,000 copies to shops selling dog collars, etc.

The Veterinary Division reported: 1,037 dog bites; 114 persons treated therefor in clinic; 1,452 Pasteur anti-rabies injections given; 595 persons bitten by dogs advised in clinic; 974 dogs suspected of rabies examined; 227 vicious dogs destroyed; 6 cases of rabies (dogs), no cases of rabies in man.

## SANITARY BUREAU

### *Prevention of Glanders.*

Special efforts were made during the year to lower the number of glanders cases, acting under the belief that Section 21 of the Sanitary Code gave authority to enforce testing, branding, and tagging of horses.

In this work, 24,282 horses were examined; 393 horses tested for glanders; 91 glandered horses were destroyed; and 12,246 horses tagged.

### *Preventing Waste of Food.*

Labor unrest since the war, and the many labor strikes that have occurred during the year on the waterfront, in the adjoining harbor, and in the New Jersey terminals, menaced to a marked degree, the food supply of the city, and required the best efforts of the field force of the Division of Food Inspections, to prevent waste and loss of perishable materials.

Waste was frequently prevented by having sound material removed from shipments of partly decomposed or spoiled foods, under official supervision, and abandoned shipments of spoiled fruits were diverted to hospitals and institutions, and the sound portions used.

## DIVISION OF SANITARY INSPECTION.

### *Assembly Halls.*

Inspections were made of all theatres, relative to ventilation, uncleanness, and general sanitary conditions, from time to time during the year.

Inspectors were especially detailed to ascertain if drinking utensils were used in common. All of the theatres in the Borough of Manhattan were visited, within a few days, and where it was found that the drinking utensils were used without having been thoroughly cleansed by an attendant, the practise was discontinued.

The following was the result of these inspections:

Violations abated by personal effort.....	12
No cause for action.....	107

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Total Theatres inspected .....	119
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This survey did not include motion picture theatres.

### *Barber Shops.*

All barber shops were inspected by the district inspectors, from time to time. The number of times that each one was inspected during the year depended upon the character of the shop. Those located in neighborhoods where the main portion of the population is not particular in habits, and would not insist upon the use of sterilized implements, were kept under strict observation, and the regulations rigidly enforced.

## ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

A survey of all barber shops during the year, as to violation of regulations, showed:

Violations abated as result of notice.....	146
Violations abated by personal effort of inspectors.....	472
No cause for action.....	1,546
<hr/>	
Total Barber Shops .....	2,164

### *Stores for Birds and Small Animals.*

There are 123 establishments in the Borough of Manhattan under permit from this Department, in which birds and small animals are kept for sale. These birds and small animals are sold for pets, and for medical research work. The places in which they are kept are under the observation of the district inspectors, and are frequently visited by them to insure cleanliness.

### *Comfort Stations.*

In nearly all railroad terminals, ferry houses, elevated and subway stations, and in a few public squares, and in the parks, there are comfort stations that afford water-closet and washing facilities for the public.

This Division is charged with the responsibility of keeping these comfort stations in a clean and sanitary condition, by compelling those in charge to make necessary repairs, from time to time, and cleaning them.

The comfort stations in the subways are the cause of more difficulty than any other set. They are located below sewer grade, the sewage that accumulates in the sumps used in connection with them has to be pumped up to the public sewers, and the mechanism of the ejectors used for the purpose is delicate and easily put out of order. Failure to operate, results in the sewage flowing on to the station platform and tracks. The subway comfort stations are more frequently inspected than any others.

There are about 800 comfort stations in the "L" and subway stations of the Borough accessible to the general public, and those are about divided equally for males and females.

### *Permits for Chickens and Pigeons.*

There are 84 permits in force for keeping chickens, and 79 for keeping pigeons. These permits only cover the keeping of these animals as pets and for domestic use.

The places in which they are located are frequently inspected by the district inspector, to assure cleanliness, and to ascertain if the number allowed by the permit is exceeded.

### *Bathing Establishments.*

There are no beach baths in the Borough of Manhattan. During the summer the City of New York conducts six free floating baths along the



## SANITARY BUREAU

river front, and five baths, in which river water is used, are conducted for profit, by corporations and individuals.

The city, also, conducts five interior baths where there are pools; and there are 83 interior baths with pools, conducted by individuals or corporations.

Samples of water are taken from the pools of all these baths, during the year, and are submitted for bacteriological examination, and the river front baths are closely watched and samples of the water from them are frequently taken, during the bathing season.

The water used in the pools of all baths along the shore, and in the interior baths conducted by the city, is filtered and treated with chlorite of lime. All of the baths that float in the waters of the bay or rivers are tight, so as to prevent the polluted water outside from entering the bathing pool.

Inspections were made during the year of all bathing establishments where persons are kept over night, to ascertain if any were overcrowded. It is the custom in some of these places for persons to take a bath during the evening, and sleep on the premises until morning.

Inspections of baths of this character were made between the hours of 2 and 5 A. M. Three establishments were found overcrowded, and the proprietors warned of the violation. Reinspections, later, showed that all excess beds had been removed, and the practise of overcrowding discontinued.

Inspections were also made of all baths in an endeavor to compel the use of individual drinking receptacles, and for the purpose of enforcing regulation requiring a clean towel for each patron. It is the custom, in Russian and Turkish baths, for the patrons to drink many cupfuls of water, during the time they are in the hot rooms, for the purpose of promoting perspiration, and the drinking utensil was being used in common in a large number of them. Through the efforts of inspectors from this Division this practise has been discontinued, and individual drinking utensils are now provided. No violations were found of the regulation requiring clean towels for each patron.

### *Horse Shoeing Establishments.*

There are 246 horse shoeing establishments in the Borough of Manhattan. Inspections were made from time to time by the district inspectors, to enforce the regulations of this Department and prevent a nuisance.

### *Ice Plants.*

Inspections were made, during the year, of plants where artificial ice is manufactured, and reports descriptive of the process used were forwarded. Certificates were issued in regard to methods employed and materials used, on request, to Railroad and Steamboat Companies, using Hygeia ice in interstate Commerce.

## ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

### *Laundries.*

Inspections were made, from time to time, during the year by the district inspectors to enforce the regulations of the Department applying to laundries.

### *Lodging Houses.*

There are 79 lodging houses in the Borough of Manhattan operating under permit, and 10 operating without permit. The latter have not been certified by the Bureau of Buildings or by the Fire Department, and permits from this Department cannot be issued until these certificates are received.

The 34 lodging houses that were used for soldiers and sailors, during the early part of 1919, have all been closed and the applications for permits cancelled.

All lodging houses were inspected, day and night, during the year. Inspections were made every week (day and night) for the period from January 1 to March 17. They were inspected every month thereafter, until the large number of other complaints received demanded almost the entire attention of the force in November and December, preventing further inspection of lodging houses.

### *Vacant Lots.*

Vacant lots in the Borough of Manhattan are the source of considerable nuisance. They are used as dumping grounds by the occupants of adjacent buildings and, in some sections, require the constant attention of an inspector to keep them clean.

Lots below the grade of the sidewalk are inspected, with a view to providing proper fences to prevent accidents to persons passing by.

### *Parades.*

On the occasion of the return of the 27th Division and 77th Division, a large number of stands were erected for spectators.

Inspectors from this Division supervised the cleaning of the stands and spaces adjacent and beneath them, after the parades.

### *Clothing Trade Survey*

A survey, lasting six weeks, was made by five inspectors, of 1143 workshops in which garments are manufactured. This survey was made with a special view to listing the hazards in the trade, and rectifying insanitary conditions of every description.

It was found, aside from the ordinary insanitary conditions found in factory buildings, that the workers in the trade were exposed to fumes from benzine used in many places for cleaning; and the fumes from illuminating gas, used to heat the pressing irons. Flexible tubing is used to convey the gas to the iron; it soon becomes dry and cracked, allowing the gas to escape. These conditions were improved, to a great extent, by the installation of heavy and properly bound tubing.

## SANITARY BUREAU

The following was the result of these inspections.

Notices issued .....	547
Reference to other departments .....	113
Nuisance abated by personal efforts .....	314
No cause for action .....	169
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Total .....	1143

### *Unmuzzled Dogs.*

Efforts are made by the Department of Health to decrease the number of cases of rabies, caused by dog bites, by compelling the owners of dogs to muzzle them when they are in public places.

Inspectors from this Division made the following number of arrests, in connection with this activity, during the year.

Arrests .....	116
Total amount of fines .....	\$94
Suspended sentence .....	32

### *Drinking Water.*

A sample of water from the reservoir in Central Park was taken every month and submitted to the laboratory of this Department for bacteriological examination; samples of bottled water, taken from different places in the Borough of Manhattan, where complaint was received as to the quality of the water were also submitted for bacteriological examination.

In all cases of typhoid, samples of the water from the water supply tank, and from the supply-pipe to the building, were also submitted for bacteriological examination.

An experiment was made with a bottle of water to determine if air in a room, which replaces water in an inverted bottle whenever water is removed from the bottle, contaminates the water.

A bottle containing five gallons of water was placed in the room on the first floor of the building formerly occupied by the Department at 139 Centre Street. This room was visited by a large number of people daily, to procure birth, marriage, and death certificates.

One-fifth of the water was removed from the bottle daily, and submitted for bacteriological examination. This was done on five successive days, and at no time did the examination reveal that the water was polluted.

### *Lack of Heat.*

There were 4921 complaints investigated during the year, in reference to the lack of proper heat (68° F) in occupied buildings.

The investigation of these complaints was an added activity that was done without increasing the force, and was accomplished by placing two

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inspectors in some districts, where the number of complaints were numerous, and having other inspectors cover two districts during the period.

The following was the result of these investigations.

Nuisance abated by personal effort .....	622
No cause for action.....	4299
	<hr/>
Total .....	4921
No. of Court cases .....	6
No. Fined .....	4
No. dismissed .....	2
Total amount of fines .....	\$850

The large number of cases returned "no cause for action" (4299) was caused, mostly, by the haste of complainants to refer to the Department whenever the heat was lowered for a short time to make necessary repairs or to adjust the fire-bed of the furnace. A large amount of time was wasted by the inspectors in investigating these cases.

In the 622 cases in which the proper degree of heat was provided, through the efforts of an inspector, considerable time was spent on each to reach the owner, and to reinspect the premises during the time that the heating plants were being repaired. In the great majority of these cases the inability to produce the required degree of temperature was caused by some defect in the heating system, which the inspector would discover and call to the attention of the landlord. If repairs were started at once, the inspector would hold the case in abeyance until the repairs were completed.

### *Pratiques.*

On the presentation of pratiques issued by the Health Officer of the Port, 1430 permits were issued to unload cargoes of vessels.

### *Railroads.*

The New York Central Railroad adjoining Riverside Drive (72nd to 134th Streets) was kept under observation from June 25 to October 31, for the purpose of obtaining evidence relative to noise made by the operation of the trains at night, and the smoke, cinders and coal gas (from the locomotives) which caused a nuisance in adjacent buildings. All of these conditions were found to prevail but a careful analysis of the reports made by inspectors who made survey failed to establish that the railroad violated provisions of the sanitary code or regulations of the Board of Health, as limited by court decisions of this state and affirmed by the Court of Appeals.

### *Ventilating Openings of Subways.*

A nuisance is frequently cause by the waste pipes, connected with the drip-pans used under the ventilating gratings of the subways, becoming



## SANITARY BUREAU

obstructed. Inspectors are continually on the outlook for this nuisance and notify the company at once of the condition. As large amounts of liquids accumulate in these drip-pans at times prompt action is necessary. As a rule, the operating companies clean them out within 24 hours after they are notified.

### *Ventilation of Railroad Cars.*

Inspections were made of cars on all surface roads, subways and elevated railroads to determine if sufficient ventilation was being provided during December. The cars were found sufficiently ventilated, by means of upper transoms and door-ways in the surface and elevated cars, and by transoms and between four and six open windows in the subways. About 1500 cars were inspected.

### *Refuse Material.*

There are 12 dumps maintained by individuals and corporations for receiving manure; three for receiving offal, swill and dead animals; and the Department of Street Cleaning maintains 8 dumps for receiving garbage, ashes, and rubbish, and 7 for receiving ashes and rubbish only, on the waterfront of the Borough of Manhattan.

Inspectors from this Division keep all of these dumps under observation.

Special attention is given to the manure and garbage dumps, during the fly breeding season.

Wherever a nuisance is found at any of them, steps are taken to abate it at once.

Considerable trouble was experienced with the dumps maintained by the Department of Street Cleaning, during the year, due to the fact that the practice of sending garbage to reduction plants had been discontinued and all garbage dumped at sea.

In changing to the new system, the authorities in charge found it necessary, to send loaded deck-scows from the river front dumps to the dump at 107th Street and the East River, where the garbage was transferred to sea-going bottom dumpers. This offensive material was held at the dump for a long time, and offensive odors from same pervaded the neighborhood.

There are about 2000 permits in force which have been issued by this Division covering vehicles that are used to transport manure, garbage, offal, ashes, fat, bones, sweepings, and swill. These vehicles are kept under observation, and whenever they are found uncovered or other regulations of the Department violated, a summons is issued to the driver.

The following number of arrests were made in connection with such violations, during the year:

Arrests .....	51
Amount of Fines.....	\$138

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Many of these permits often change hands as the owners sell the vehicles. It is necessary to inspect them frequently, as to equipment, and to determine if they are still being used by the owner specified in the permit.

### *Schools.*

All buildings leased by the Department of Education for public school purposes are inspected by inspectors from this Division, before the Department accepts them for use. Also all private schools are inspected by inspectors from this Division before a permit is issued to use them

### *Stables.*

All stables are kept under observation by the district inspectors, and the owners are required to remove all manure from them, and keep the stables in good sanitary condition.

A census was made of all stables in the Borough, during March, and showed:

Number of Stables.....	1,577
Number of Horses.....	37,825

a reduction of 436 stables and 17,828 horses since 1917. The stables are operated under permits from this Division.

### *Spitting.*

An "anti-spitting campaign," from November 10th to 22d, inclusive, gave the following results:

Arrests .....	424
Sentences Suspended .....	43
Jail Sentences .....	1
Fined .....	352
Amount .....	\$584
Dismissed .....	28

### *Temporary Privies.*

Inspectors from this Division required the installation of temporary privies for the use of workmen in all new buildings that were erected during the year.

ASSISTANT SANITARY SUPERINTENDENT'S OFFICE, BOROUGH OF  
MANHATTAN.

DIVISION OF FOOD AND DRUG INSPECTION.

### *Terminals.*

The most important squad of inspectors is the one covering the terminals, wholesale markets and warehouses. This squad, which consists of three men, is assigned as follows:

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- a—Important piers, and railroad terminals.
- b—Wholesale fruit and vegetable markets, and warehouses.
- c—Wholesale egg markets, fish, and meat establishments.

It is the duty of this squad to inspect and supervise the handling of foods at the establishments referred to, seize, condemn, and destroy all spoiled or otherwise unfit foods which arrive in this city. Enforcing the provisions of the Sanitary Code at the points of arrival, prevents the distribution of spoiled food to various food establishments, and so protects the public. This detail also eliminates in a great part, the necessity for inspection of food at retail establishments, thereby enabling the inspectors to concentrate upon the more important branches of food inspection service.

### *Factory Inspection.*

A detail was made of inspectors who by their special training are qualified to carry on the inspection of materials, particularly raw materials, which enter into the manufacture of foods, such as jams, jelly, confectionery, spices, etc.; so that a comprehensive idea could be gained as to quality of foods used in these factories, as well as the sanitary conditions surrounding the handling of the same. This work was so arranged that frozen products, such as ice cream, which are classified as being seasonable products, would be thoroughly supervised.

Prior to and during the holiday period, when candy was being manufactured in very large quantities, it was felt that the squad referred to was inadequate to cover this important activity. The Borough of Manhattan was, therefore, subdivided into five factory inspectorial districts, and two inspectors were assigned to work together in each district and concentrate on each food factory.

### *Milk Inspection.*

The milk inspection service of this Division consists of three inspectors, one of whom is assigned as supervisor, and whose duty is to see that the milk and milk products sold in the Borough of Manhattan conform with the legal standard. It is their duty to cover the entire Borough so that milk and cream is being continually tested in the various sections. It is also their duty to procure samples, especially from the distributors, and submit them to the Chemical Laboratory for analysis. In carrying out this detail, it is necessary for them to cover the various milk arrival points, so as to preclude the possibility of distributing substandard or questionable milk throughout the city.

### *Meat Inspection.*

A squad of two inspectors, one veterinarian, and a supervising inspector is detailed to the various wholesale meat arrival points. It is their duty to

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inspect all country dressed carcasses, or parts thereof, to ascertain if this material is fit for human purposes. Where such material is found to be in a wholesome condition, to stamp it "inspected and passed," as provided by the local ordinances, and wherever spoiled or diseased material is discovered, to see that it is condemned, and properly disposed of under supervision.

### *Drug Inspection.*

A graduate pharmacist was detailed to act as inspector of Drugs, to cover drug establishments, to ascertain if the drugs handled and sold conform with legal requirements, and to investigate complaints which relate to the drug business generally.

### *Miscellaneous Inspection Work.*

Special details were also arranged, of qualified inspectors, to carry out special investigations, such as food poisoning cases, and other conditions which require the attention of an inspector who is peculiarly fit to make such inspections. An assignment was also made of a sanitary inspector who, due to his expert knowledge of the sanitary science, could cover details which require the knowledge of a man with a technical training in order to procure the proper results.

### *General Scope of Work of the Division.*

The scope of the work of this Division primarily begins with the enforcement of the provisions of the Sanitary Code and the State laws and City ordinances which relate to food and drug inspection activities. This statement applies particularly to activities to determine the following:

- (a) The quality and wholesomeness of food.
- (b) The prevention of the adulteration and sophistication of foods and drugs, and the sale of fraudulent products.
- (c) The inspection of all food and drug establishments, to see that the sanitary conditions are proper.
- (d) The co-operation with the Bureau of Preventable Diseases to prevent the employment of persons afflicted with communicable, or contagious diseases, in food establishments; also to prohibit the employment of persons in whose families contagious diseases exist and no efforts are made to isolate the patient.
- (e) The co-operation with other city departments, state departments and Federal agencies, so as to co-ordinate the food activities and prevent, as far as possible, the duplication of inspectorial work, and interference with the plans of these other agencies.

The work of this Division is also educational, as well as investigational,



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and is carried on with the idea of teaching those whose ideas of cleanliness and sanitation are not up to the requirements of the Department of Health.

### *Terminal Inspection and Wholesale Markets.*

Much attention was given to the piers and terminals, owing to the many strikes called by the labor organizations of drivers, express employes, etc. Although in some instances large quantities of foodstuffs were held on the piers, there was comparatively no spoilage, which was probably due to the previous effective work of the terminal squad. The shippers were particularly careful to have the shipments come through in good condition, due to the increased cost of transportation, as well as increased cost of material and labor, because the seizure and destruction of the goods at this market would cause a heavy financial loss.

Resultant of this state of affairs, there has been considerable improvement in the quality and conditions of the foodstuffs received in this city so that where normal conditions surrounding the shipment prevailed, the food arrived in good condition. Whenever shipments were received which consisted in part of decomposed or spoiled food materials, every effort was exerted by the inspectors to prevent the loss of the sound material contained in the shipments, and in these efforts we were particularly successful, the incentive being that the materials were worth such a large amount of money that it was well worth overhauling the shipment. This reconditioning process was always carried on under the immediate supervision of an inspector, so that none of the spoiled materials could enter into the commerce of the city.

During the strike situations referred to, when no deliveries of perishable foods were being made, it was our purpose and desire to have such perishable foods released so that deliveries were made under the supervision of an official of the Department, and the work was carried on in such a manner that the strikers were not antagonized and were shown the necessity for taking such action. This procedure prevented a considerable loss of money to the shipper, and also released for delivery large quantities of perishable products to the consuming public. For instance, on June 23d, during the strike of the Teamsters' Association when deliveries of perishable commodities were prohibited by the union, a large shipment of berries, worth a considerable amount of money, was undergoing spoilage on the pier of the Hudson Navigation Co. (Pier 24, N. R.). Through the efforts of the representative of this Division, permission was obtained from the strikers to permit the delivery of this material, so as to prevent a complete loss. Unfortunately, however, due to adverse weather conditions, the fruit was unsuitable for the general market requirements and was diverted to food manufacturing establishments, owing to its being dead-ripe, and quick action being necessary to prevent entire loss.

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### *Factory Inspection.*

The food factories of the Borough of Manhattan were inspected at regular intervals, with the view to ascertain the quality of foods used in the products manufactured, as well as the sanitary conditions surrounding such manufacturing processes. It is worthy of note to report that the great majority of factories in this borough are operated by individuals and corporations who seem to make every effort to comply with the law.

In a number of instances, however, it was found that unscrupulous dealers were taking advantage of the public by using decomposed, spoiled, or otherwise unfit food materials in the manufacture of products sold by them. Through the excellent work of the inspectors assigned to this detail, we were successful in locating a number of such dealers, and in each instance where it was found that the spoiled material was used in the manufacture of food, the facts were forwarded with the recommendation that the dealer be prosecuted.

A special investigation was also made, early in the year, to determine if the product called "Avizol" was being used in the manufacture of hard candy. This investigation revealed the fact that in some of the candy factories, "Avizol" was being used, and samples of the product were procured and submitted to the Chemical Laboratory for analysis, where it was found that the candies contained sulphurous acid, and added preservative, and the products were therefore sold in violation of Section 139 of the Sanitary Code. The facts were submitted to the Advisory Committee for the opinion as to the injuriousness of the product "Avizol" and it was their opinion that it is a deleterious substance and should be prohibited in food products, especially those used by children. In view of this opinion, the candy manufacturers were notified to immediately discontinue the use of "Avizol," and subsequent reinspections failed to reveal that any manufacturer was continuing its use.

### *Bakery Inspection.*

Bakeries of the Borough of Manhattan are under continuous surveillance, both to determine the quality of food used in the manufacture of products and the sanitary conditions of the bakeries. Although the bakeries have been under a sanitary certificate for a considerable length of time, it appears from reports of inspections that many do not view the requirements of the State Labor Law and of this Department with the proper attitude. Heretofore, it has been the practice to make a number of reinspections at bakeries where insanitary conditions were reported to exist, and a considerable length of time was given for the removal of the violations, and after a certain number of reinspections, if the insanitary conditions are not corrected, the application for a sanitary certificate was denied, and after the denial notice was served, more reinspections were made.

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This procedure was somewhat cumbersome and did not produce the proper results, in that it enabled the bakers to continue the manufacture of their products under insanitary conditions. There was also a considerable loss of time on the part of the inspectors in making reinspections, as well as additional duties for the office force in reporting on the bakery. This procedure has been modified so that whenever application is received for the renewal of a sanitary certificate and, upon the first inspection, insanitary conditions are found, the operator is called to this office and conditions complained of are fully explained to him. He is notified that his failure to remove the violations, within five days after the hearing, will be deemed sufficient cause to warrant a recommendation that this application is denied, and furthermore, that he will be served with a summons for conducting his business in an unsanitary manner. This change of procedure has been very satisfactory, and at the present time very few applications are forwarded to the Board of Health for denial. In following this arrangement, we have been successful in cleaning up a number of insanitary bakeries.

At the time of making inspections of the bakeries, the inspector also examines the quality of the food. The great majority of the dealers, it has been found, purchase materials of good grade and keep them under satisfactory conditions. Some of the dealers, however, make a practice of buying low grade food material which they store under improper conditions. A number of instances have been reported where such food found in the possession of the bakers would have been used in violation of the Sanitary Code provisions, and recommendations had been made that the dealers be brought before the court.

Attention is also given to the exposure of food products in bakeries as to contamination due to its being uncovered and unprotected from dust, dirt, and unwarranted human handling. Wherever such violations are found it is the duty of the inspectors to instruct the operators of the establishments as to the requirements of Section 142 of the Sanitary Code, and where the dealers fail to readjust their business methods to meet the requirements of this section, a summons is served.

Periodical night inspections of bakeries are made for the purpose of examining the eggs used in the manufacture of cakes, etc. This activity is of special importance in view of the present high cost of eggs, and the incentive of unscrupulous dealers to use decomposed eggs in their products. The results obtained in this activity have been very satisfactory. These night assignments are beneficial in that they have a moral affect upon the bakers.

### *Restaurant Inspection.*

Restaurant inspection is considered one of the most important activities of this Division. Considering the fact that the foods, at the present time, are extremely high in price, there is every incentive for restaurant



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operators to buy and serve food of questionable character. The inspectors, therefore, are very diligent in carrying out this detail to make sure that the food in the restaurants is sound and wholesome in every respect. Wherever unsound food is found, the facts are forwarded for the attention of the court.

Special attention is also given to the general sanitary condition of the establishments, and every care is taken to see that the glasses and utensils used in the service and preparation of food are thoroughly cleansed, after use. Upon inspections made, it appears that some of the dealers do not pay proper attention to the requirements for the washing of drinking glasses, and wherever such conditions are found, a summons is immediately served.

In keeping with this activity, it is our desire, wherever possible, to cause the dealers to install the use of individual drinking cups.

Upon inspection of restaurants, special attention is also given to see that each food handler possesses a card of physical examination declaring him to be free from any infection or communicable disease. Wherever it is found that the food handler does not possess such a card, reference is immediately forwarded to the Bureau of Preventable diseases for attention.

### *Retail Establishment Inspection.*

The work of the district inspector relates chiefly to the inspection of retail food establishments, such as groceries, butcher shops, bakeries, confectioneries, restaurants, fish stores, etc., for the purpose of determining if the quality of the food held conforms with the requirements of the Department, and to note the sanitary conditions under which they are handled. It is the duty of the district inspector to report to the office, immediately, whenever spoiled foods are found in such a condition as to indicate that they have been recently delivered by a wholesale dealer or distributor, so that a reinspection may be made at once at the point of delivery, and so prohibit further distribution. Whenever it is found that the point of distribution is located outside of the jurisdiction of this division, a reference is forwarded at once to the borough in which the wholesaler is located so that they may take proper action.

In a great majority of the retail stores, the quality of food handled is usually found to be up to the standard. In a few instances, considering the large number of retail establishments, spoiled foods have been found on sale, and whenever such is the case, a recommendation is made that the dealer be prosecuted.

There has been considerable improvement in the sanitary conditions of establishments since the work has been arranged so that the district inspector can concentrate upon establishments of this character.

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Attention is also given to see that the regulations of the Department are enforced concerning the handling and sale of milk in retail stores.

### *Milk Inspection.*

During the early part of the year, a controversy arose between the milk producers and distributors, and the situation became so tense that many of the producers refused to ship milk to the city. This state of affairs was very serious, and compelled the distributors to tap other sources of supply, so as to enable them to give this city fresh milk. This situation made it necessary for them to bring milk into this city from western points of production, and it was the understanding that such milk brought into the city should be pasteurized. The pasteurizing requirements were of special importance in view of the milk being received from sources which have not been inspected. There was also a possibility that such milk was produced in localities where the standards of cleanliness imposed by the Department were not met. Every effort was, therefore, made to see that the milk shipped, labeled to be pasteurized, was properly handled. In several instances, it was found that the large dealers were selling such milk as pasteurized whereas, in fact, it had been delivered from the railroad station to the consumer without having been subjected to the process of pasteurization. Reports were, therefore, forwarded with the recommendation that these offending concerns be prosecuted.

A seizure was made of thirty-one cans of milk from a wagon of a large distributor. This milk was found to be extremely dirty and absolutely unfit for human food purposes. The milk did not have the usual characteristics of fresh milk, in that there was no cream line and was yellowish in appearance. Representative samples were submitted to the laboratory for investigation, and it was pronounced to be "reconstituted milk." Sufficient facts could not be obtained to bring prosecution.

Much of the milk which arrived at this time was found to be below the legal standard.

The inspectors were successful in obtaining a number of samples of substandard milk, concerning which proper action was taken. Several cases were forwarded for prosecution against a dealer in whose possession cream was found adulterated with starch. In disposing of these cases, the court imposed a fine of \$200. Several cases were also forwarded against milk drivers who were found skimming milk, carrying water on their wagons, and committing other violations of the Sanitary Code. In each instance a recommendation was made that the offending driver be brought before the court.

During the summer months, special attention was given to the enforcement of the regulations of the Department which required that milk brought into the city must be below 50 degrees F. Concentration of the inspection

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service was made on the railroad terminals so as to prohibit the delivery of milk which did not conform to this temperature standard. Owing to the extreme scarcity of milk during these months, as well as the scarcity of ice, instead of denaturing the milk, the inspector placed an embargo upon the shipments, and caused the dealer to bring the temperature below the required standard before deliveries were permitted. This practice prevented the destruction of such milk as was good for food purposes, and stopped the delivery of uncooled milk.

### *Meat Inspection.*

The requirements of the regulations regarding country dressed carcasses and parts thereof, not bearing the stamp of inspection of recognized authorities, were carefully carried out. Specially trained and qualified inspectors were detailed to make inspections and thorough examinations of such material arriving in this city. A veterinarian was also assigned to this squad.

This squad has been exceedingly successful in giving satisfactory service to merchants who receive country dressed carcasses which, at times, arrive in large quantities, and not only necessitate quick action on the part of the inspectors but also require that they work considerably over time, in order to prevent spoilage.

The wholesale meat distributing establishments were kept under the observation of the district inspector, and from time to time, whenever necessity required it, the special squad of trained inspectors was detailed to the inspection of these establishments so as to make doubly sure that the quality of meat sold conforms with requirements of the Department. By augmenting the district inspecting force with this special assignment of trained men, the wholesale meat situation was well covered. The retail butcher shops were also covered by the district inspectors and, in a number of instances where unfit and spoiled materials were found under circumstances indicating that they would be sold to the consumer, the facts were forwarded to the attention of the court.

### *Drug Inspection.*

The inspection of drug stores and the taking of samples of drugs for chemical analysis was somewhat curtailed during the past year, due to the fact that the pharmaceutical chemist formerly employed by this Department had resigned, and for a considerable length of time, the position was vacant.

The activity was also lessened due to the assignment of drug inspectors to the clinic which was opened for the treatment of drug addicts. We were successful, however, in obtaining a number of samples of drugs, and wherever substandard drugs were found to be sold, proper action was taken.

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Several cases of importance were disposed of in the Court of Special Sessions against persons found to be practicing medicine without a license. In one case, a prison term was imposed.

A number of hearings were also held in the Municipal Term Court with reference to a case pending against a man who was charged with having manufactured and sold a so-called serum treatment which was said by him to be a cure for tuberculosis, and the preparation therefore sold in violation of Section 118 of the Sanitary Code. This case is still in court and hearings are continued from time to time.

A case was disposed of against a pharmacist who was charged with having compounded a prescription illegally, in that he failed to dispense the amount of drugs called for by the physician's prescription. The court, upon reviewing the facts, imposed a fine of \$250.

The inspectors were detailed to visit each drug store located within the Borough of Manhattan, and distribute a circular relating to Section 117 of the Sanitary Code, with reference to the registration of patent or proprietary medicines, so that the druggist could be fully informed as to the requirements of this amended section.

### *Food Adulteration.*

Owing to the scarcity of imported olive oil, many of the dealers, especially those of the foreign element who deal in canned oils and make a business of packing or filling cans of oil, resorted to the practice of using cans which were so labeled and marked as to convey the impression to the purchaser that the oil contained within the cans was imported pure olive oil, whereas, upon analysis, it was found that the oil was not pure, but was a compound consisting of a greater portion of cotton-seed oil and, in some instances, sesame oil; thereby perpetrating a fraud upon the public in that the oil was sold at a price far above that which should be charged for compound oil; also in giving the impression that it was imported olive oil, when in fact it was not. We were successful in forwarding the facts in a number of instances of this character so that the case could be brought to the attention of the court. In each of the cases tried, thus far, the court has imposed a substantial fine.

An investigation was made to determine if ground coffee contained cereals, chickory, or other adulterants. This investigation revealed the fact that several of the dealers were selling the adulterated articles as pure ground coffee. In such instance a recommendation was made that the concern be prosecuted.

An investigation was also made concerning the sale of so-called egg substitutes. It was found, as a result of this investigation, that preparations of this type do not enjoy any extensive sale in this city. From information obtained it appeared that the products sold as egg substitutes did not pro-



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duce satisfactory results in baking, which probably accounts for the unpopularity of the preparations.

In several instances, it was found that pure dried eggs were sold under misleading conditions, in that statements were made on the label, or other printed matter, indicating that a certain quantity of the egg would produce the same results as a given quantity of shell eggs. From the facts obtained from the Federal authorities as to the egg standards, hearings were given to the distributors of this misbranded product and, in each instance, the labeling was corrected so as to conform with the requirements of the Department.

The same was also found to be true of a sample of powdered skimmed milk of which the label was so worded as to convey the impression that a given quantity would produce a certain amount of liquid milk. Needless to say this was misleading, in that skimmed milk powder can only produce *skimmed* milk, when mixed with proper proportions of water, and therefore, the product was considered misbranded within the meaning of the Sanitary Code provisions. A hearing was held, which resulted in the dealer correcting and modifying the printed matter, so as to conform with the legal requirements.

An investigation was made to determine if a high grade technical glue was being sold as food gelatine. This investigation revealed the fact that this fraud was being practiced, and, in one instance we were successful in obtaining samples of so-called food gelatine from a concern which buys nothing but glue. The samples are now at the Chemical Laboratories awaiting analysis. It is felt, however, that greater progress could be made along these lines if a standard existed for food gelatin.

### *Exposure of Food on Streets.*

In enforcing Section 142, Sanitary Code the inspectors paid particular attention to the exposure of food within establishments where such food was exposed to contamination and unwarranted human handling. It is the policy of this division to give a warning, and instruct the operator of the establishment as to the requirements. After sufficient re-inspections had been made and no apparent efforts exerted by the operator to remove the violations or modify the business methods so as to have the establishment conform with the requirements of the Department, a summons was served.

With reference to the exposure of food to contamination on the public streets, while this matter primarily comes within the jurisdiction of the police authorities, the inspectors were notified to serve summons wherever flagrant violations were found. This procedure was unsatisfactory in that with the force available, it was absolutely impossible to cope with the situation.

During the latter part of the year, this code section was amended so

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that it now practically prohibits the sale of unwrapped candy on the public streets. Advantage was immediately taken of this amendment, and wherever violations were found, a hearing was given the operator so that he could be thoroughly instructed as to the requirements.

### *Cleansing of Utensils.*

Particular attention has been given by the inspectors, and from time to time by special squads, to the requirements of Section 144 of the Sanitary Code, which provides that utensils used in the service of food or drink be properly cleansed after use. This code Section is considered by us to be one of the most important, in that improperly washed utensils, which have been subjected to contamination by persons suffering from contagious or communicable disease, are of utmost importance to public welfare. Unfortunately, however, the magistrates do not view this important requirement with the proper attention, in that the inadequate fines are usually imposed, and the food dealers find that they only have to pay a small amount of money, and are, therefore, not impressed with the necessity of properly observing this important section.

### *Prosecutions.*

As indicated above, a number of important cases have been forwarded against various food dealers charged with having violated sanitary code sections. In presenting these cases in court, the inspectors have given their testimony in such a manner that, in many instances, it was necessary for them to qualify as experts before important facts surrounding the case could be given, and as a result of this training, in but a very few instances did we have acquittals in important cases. This work was carried on with the expert guidance from the Corporation Counsel's Office.

With reference to the enforcement of minor code sections, which are disposed of in the Magistrates' Court, the inspectors have been particularly active in bringing to the attention of the court all flagrant violations. Unfortunately, however, the Magistrates do not view these code sections with sufficient importance so that, in many instances, our activities along these lines do not produce very satisfactory results.

### *Co-operation with Other Agencies.*

It has been our policy to co-operate with all other city officials so as to co-ordinate our activities and prevent, as far as possible, duplication of inspectorial work, and so as not to interfere with investigations being carried on by other official bodies. As example of the co-operation with the Federal authorities, it may be reported that, at their request, a number of seizures of adulterated scallops and other food stuffs were made. This activity prevents the distribution of food which does not conform with the Federal food requirements.

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Co-operation was also maintained with the U. S. Department of Agriculture. This statement applied especially to several large shipments of tomatoes which arrived in this city in an extremely poor condition and which presented an unusual appearance. A study by the Federal authorities resulted in the statement that the tomatoes were affected with a certain disease, and they communicated the facts to their field agent in California, from whence the shipments were made, so that a thorough field investigation could be carried out.

In several instances, information was received from the police authorities that deaths had been caused by consumption of a liquor said to contain wood alcohol. In each instance, qualified inspectors were immediately assigned to act in co-operation with the police so that, wherever possible, samples of suspected liquors were obtained and immediately submitted to the Chemical Laboratory of the Department for analysis.

As previously stated, inspectors at the piers co-operated with army officials in instructing quartermasters' representatives in the inspection of food.

During the latter part of the year, quantities of food were released for disposition to the general public by the U. S. Army and Navy Departments. The greater part of this material was sold through the Department of Public Markets of this city, and, on account of the volume of business, they were dependent almost entirely upon inexperienced and volunteer workers to handle the output. The great majority of these workers were inexperienced in the handling of food, and were not familiar with the appearance of food undergoing decomposition. A special detail of inspectors was, therefore, arranged to visit all of the public schools and other places used as distributing places, and instructions were given to these workers so that they would be familiar with the appearance of unwholesome foodstuffs. All food found to be of questionable character was placed aside for return to the Federal authorities for disposition.

### *Wood Alcohol in Food Products.*

During the latter part of the year, and due to the enforcement of law which prohibits the sale of intoxicating liquors, deaths were reported as the result of consuming liquors which contained in a large part wood, or methyl, alcohol. It was our idea to prevent, as far as possible, the sale of such liquors, and a detail of specially trained inspectors was arranged so that each section of the borough was covered and field tests were made at saloons, or other points, where intoxicating liquors were found. Thousands of samples were examined, and we were unsuccessful in locating any liquor containing wood alcohol at these distribution points. It appeared, therefore, that much of this prohibited compound was sold by peddlers or other irresponsible persons and that the majority of the saloon keepers were selling liquors which did not contain wood alcohol.



# SANITARY BUREAU

TABLE NO. 1.  
INSPECTION OF FOOD ESTABLISHMENTS.

Character of Establishments.	Retail Establishments.	Wholesale Establishments.	Total Inspections.
Bakeries.....	10,320	....	10,330
Butchers.....	9,256	....	9,256
Butchers and provisions.....	....	1,153	1,153
Cafes.....	790	....	790
Candy factories.....	....	717	717
Carbonated and mineral waters.....	....	293	293
Cold storage plants.....	....	118	118
Commission houses.....	....	2,408	2,408
Confectionery.....	4,513	....	4,513
Delicatessen.....	1,012	....	1,012
Drug stores.....	1,813	....	1,813
Eggs, wholesale.....	....	395	395
Egg breaking.....	....	84	84
Fat rendering.....	....	23	23
Fish and shellfish.....	....	176	176
Frozen products.....	....	1,044	1,044
Groceries.....	12,783	....	1,2782
Markets.....	....	1,018	1,018
Miscellaneous.....	12,786	3,435	16,231
Pier and wharves.....	....	3,100	3,100
Push carts.....	24,185	....	24,185
R. R. terminal.....	....	378	378
Restaurants and hotels.....	19,506	....	19,506
Slaughter houses—poultry.....	....	1,094	1,094
Smoke houses and meat preserving.....	....	667	667
Stands.....	16,264	....	16,264
Warehouses.....	....	1,459	1,423
Total.....	113,927	17,586	130,513

TABLE NO. 2.  
CONDEMNATION OF UNWHOLESOME PRODUCTS.

Character of Foodstuffs.	Pounds.
Fruit.....	4,650,132
Vegetable.....	2,747,936
Canned goods.....	175,504
Groceries.....	170,877
Eggs.....	48,785
Milk.....	35,614
Cream.....	2,734
Condensed milk.....	20,726
Butter.....	7,226
Cheese.....	
Confectionery.....	5,413
Beef.....	126,931
Veal.....	12,943
Mutton or lamb.....	
Pork.....	41,767
Poultry.....	339,409
Game.....	
Fish.....	604,560
Shell fish.....	
Miscellaneous.....	293,962
Total.....	10,483,856

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TABLE NO. 3.  
PROSECUTIONS DISPOSED OF.

Section of Code Violated.	Arrests.	Fined.	Amount Fined.	Sentence Sus-pended.	Dis-charged.
19.....	..	...	.....	1	...
116.....	..	6	\$345.00	3	10
124.....	..	4	340.00	...	...
139.....	..	9	1,020.00	1	6
142.....	..	499	1,202.00	71	10
144.....	..	367	924.00	35	7
147.....	..	405	1,099.50	98	17
151.....	..	101	1,638.00	58	18
152.....	..	149	4,340.00	78	25
156.....	..	7	170.00	3	2
159.....	..	138	947.00	31	10
163.....	..	541	9,473.00	123	44
331.....	..	181	4,560.00	31	9
155.....	..	38	438.00	30	3
Total.....	..	2,355	\$26,396.50	557	161

*Health Squad.*

The Health Squad, consisting of one lieutenant, two sergeants, and fifty patrolmen is assigned to the Sanitary bureau, and detailed to the various buroughs, serves the other Bureaus of the Department officially, when requested. They enforce official notices and orders, serve summonses and warrants, vacate premises, enforce marine quarantine, when requested by the Health officer of the Port, and supplement the field force of the Sanitary and Food Bureaus.

SANITARY BUREAU

RECAPITULATION OF ARRESTS, BY PATROLMEN OF HEALTH SQUAD—MANHATTAN, 1919.

	Sanitary Code Sections.																			1.		2.	Total.
	10.	17.	18.	19.	20.	40.	53.	142.	213.	216.	227.	239.	240.	241.	248.	251.	253.	301.	313.				
																				P. H. D. 440.	Dis. Con.		
Arrests.....	4	989	1	16	13	6	2	209	459	474	1	1	20	3	14	1	9	1	1	1	1	1	
Failed to appear.....		8	..	..	..	..	..	1	24	22	..	..	1	..	..	..	..	..	..	..	..	..	
Discharged.....	1	5	..	..	1	..	..	1	2	2	1	..	1	..	..	..	..	..	..	..	..	..	
Convicted.....	3	792	1	8	6	6	2	185	425	412	..	..	15	3	14	1	8	1	1	1	1	1	
Suspended sentence.....	..	192	..	8	6	..	..	23	32	60	..	1	4	..	..	..	1	..	..	..	..	..	
Prison sentence.....	..	..	..	..	..	..	..	1	3	..	..	..	..	..	..	..	..	..	..	..	..	..	
Fines.....	65	992	5	20	9	8	2	351	532	517	..	..	39	13	17	1	23	2	1	..	..	..	

1—Public Health Laws, Sec. 440.

2—Disorderly Conduct.

## DIVISION OF INSTITUTIONAL INSPECTION

### *Staff.*

The Chief of Division is assisted by a force of twenty-three Medical Inspectors, two clerks and a stenographer.

### INSTITUTIONS UNDER SUPERVISION.

	In Town	Out of Town
Hospitals.....	133	..
Dispensaries.....	111	..
Diagnostic laboratories.....	169	..
Private sanatoria.....	71	..
Homes for adults.....	174	..
Homes for children.....	127	49
Day nurseries.....	115	..
Homes for the aged.....	52	..
Homes for incurables.....	17	..
Reformatories and prisons.....	25	1
Miscellaneous.....	1	..
Totals.....	995	50

### *Functions.*

According to the type of work performed by them, the medical inspectors of the Division are divided into two general groups; one known as Institutional Diagnosticians; and the other as Inspectors of Subsidized Institutions.

The diagnosticians, beside making diagnoses in institutions of all types, exercise sanitary supervision of the premises, make physical examinations and re-examinations, twice a year, of all children, in nonsubsidized institutions, administer sera and vaccines, apply the Schick test, collect cultures, smears, and blood for laboratory examination, examine food handlers (in institutions) for certificates, investigate, when application is made for a permit to conduct day nurseries, child caring institutions, private hospitals, sanatoria, and laboratories for the diagnosis of communicable disease. They verify the monthly medical reports of those child caring institutions not receiving money from the city (as required under State Public Health Law). They diagnose illness of Health Department employees in institutions, and perform field work for the Chief Diagnostician and the various bureaus of the Department, in so far as their work concerns institutions, and investigate all abortions occurring in institutions, and notify the Police Department if any appear to be of a criminal nature.

The inspectors of subsidized Institutions visit institutions receiving pay from the city for the care of inmates. Most of these institutions are

## DIVISION OF INSTITUTIONAL INSPECTION

located within the city limits, but some are outside, in New York State and in New Jersey. The inspectors, at the beginning of each year, make a physical examination of all inmates, regardless of age, and, later, in the half year make a re-examination of those who were found defective when the primary examination was made, to note whether the defects found have been properly corrected, and to urge and advise those in charge to make further effort to have uncorrected defects properly treated. In addition, these inspectors make regular sanitary inspections of the grounds and buildings of institutions assigned to them, and, on request, or by their own initiative, administer sera, anti-toxins, etc. As a rule they do not undertake the diagnosis of communicable disease. They also make examination for physical defects in institutions under the jurisdiction of the Department of Corrections.

The year opened with 23% of our inspecting force absent on military and naval duty for which they had enlisted. The first due to return from service came back January 18, and from that date, others were mustered out at various times. Those who remained at home did their "bit" by cheerfully taking on the extra work necessitated by the absence of their fellow workers, so that the total amount of work accomplished during the year is very gratifying when the depletion of the force is considered.

Besides the routine work of the Division, the following surveys were undertaken:

1. Hospital Facilities for Influenza Cases.
2. Bed Capacity for Hospitals.
3. Character of Institutions in the City Maintained without a permit from the Department.
4. Preparations of Hospitals for a Possible Influenza Epidemic.
5. Capacity and Census of Child Caring Institutions.
6. Nurses Training Schools.

Intra-divisional conferences were held, with short talks on physical defects found in children; a conference with the Bureau of Standards and Appeals, as to proper methods to be followed in granting permits for child caring institutions, and a conference with representatives of the Bureau of Buildings, Tenement House Department, and the Fire Prevention Bureau of the Fire Department, regarding the standardizing of procedure in the various Boroughs.

Until the new Reception Hospital on Queensboro Bridge was completed, (Dec. 2, 1919) all children about to be admitted to the Children's Clearing Bureau of the Department of Charities, were examined by us to determine whether the children had any communicable disease.

# ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

## *Institutions for Children—Summary of Monthly Medical Reports, 1919.*

### Deaths.

Child Caring Institutions .....	98
Misericordia .....	26
N. Y. Foundling.....	364
N. Y. Nursery and Childs Hospital.....	306
	<hr/>
	794

### Cases of Communicable Diseases.

Diphtheria .....	119
Scarlet Fever .....	69
Measles .....	192
Pertussis .....	184
Eye Disease .....	346
Skin Disease .....	884
Chicken Pox .....	172
Mumps .....	147
German Measles .....	4
Poliomyelitis .....	0
Typhoid .....	18
Tuberculosis .....	23
Pneumonia .....	356
Influenza .....	239
	<hr/>
	2,743

### Cases of Non-Communicable Diseases.

Tonsilitis .....	983
Injuries .....	240
Pleurisy .....	0
Bronchitis .....	409
Blood Poison .....	289
Diarrhoea .....	8
Miscellaneous .....	7,860
	<hr/>
	9,783

Deaths in Child Caring Institutions were..44.3% less than in 1918  
Communicable Diseases were .....31.3% less than in 1918  
Non-Communicable Diseases were..... 4.5% less than in 1918

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Total Death Rate.....14.6% less than in 1918

# DIVISION OF INSTITUTIONAL INSPECTION

## TOTAL EXAMINATIONS OF CHILDREN IN INSTITUTIONS, 1919.

	Children Examined.	Normal.	Defective.	Children Re-examined.
Manhattan.....	5,126	1,812	3,314	2,526
Bronx.....	7,065	2,666	4,399	2,562
Brooklyn.....	8,424	4,931	3,493	2,412
Richmond.....	3,527	1,939	1,588	1,093
Total.....	24,142	11,348	12,794	8,595
Out of City.....	13,672	4,633	9,039	7,339
Grand Total.....	37,814	15,981	21,833	15,934



## BUREAU OF PREVENTABLE DISEASES

The year 1919, like the preceding year, was a notable one in the history of the Department, and of this Bureau. The influenza epidemic which swept the country in 1918, and continued nearly until the late spring of 1919, recurred in the fall of 1919, although in much less violent form, as was to be expected from the study of previous epidemics. The report on the epidemic, so far as it concerns the Bureau of Preventable Diseases, will be dealt with at considerable length elsewhere.

While the influenza epidemic occupied the center of the stage, there were two things which, from a constructive standpoint, stand out significantly in the development of the activities of the Bureau of Preventable Diseases.

The first and probably the most important constructive development was the effort to make actual, real, and effective the organization of the Division of Epidemiology, which, in previous years, had been a mere name representing only those activities which had to do with the routine supervision of typhoid fever, epidemic cerebro-spinal meningitis, and poliomyelitis. In fact, this Division had been our old typhoid division, operating under a very dignified and high-sounding title, although in all the time in which it was designated the Division of Epidemiology, previous to 1918, it had not concerned itself with a single communicable disease other than those already enumerated.

In the past year, the Division, under the immediate guidance and supervision of the Director of the Bureau, developed plans and methods which had for their aim the immediate detection in any part of the city of an undue prevalence of any one of the communicable diseases. In other words, the epidemiological work of the Bureau developed a more accurate endemic index than had previously been available. Special studies were undertaken to ascertain the age groups and sex classification of all persons reported to be suffering from scarlet fever or diphtheria, as well as those who died from these diseases. So far as our records indicate, this is the first time that these facts have been accurately and statistically developed. They are of importance as giving us a method of work which will throw light upon the relation of special age groups, and of school attendance, to the incidence of diphtheria and scarlet fever, as well as of other communicable diseases, and will probably serve as a basis for indicating how to deal most effectively and intensively with the problem.

A comparison was made of the case incidence and mortality rate from the commoner communicable diseases in forty-seven cities of this country having a population of over 100,000. In other words, we had a crude guide of the difference not only in incidence, but a reflection upon the method of

## BUREAU OF PREVENTABLE DISEASES

administration in the various cities, as contrasted with our own, which might serve us as a stimulus and a guide in the further development of our work.

A special study was made in several thousand diphtheria cases, to ascertain the relation of the date of injection of antitoxin to the ultimate outcome of the case.

Special methods of tabulating the results of the activities of our nurses and physicians in securing cases for the Schick test and for the administration of toxin-antitoxin, and for tabulating the results of such tests and immunization, have been prepared.

When encephalitis lethargica was first recognized, the epidemiological work of this Bureau was immediately adjusted to enable us to secure prompt information through the Division of Institutional Inspection, through the Bureau of Records, and through the Meningitis Division of the Bureau of Laboratories, of the status of this disease, so that we have at all times been well informed of the comparative incidence and relative importance of this disease, as contrasted with other diseases.

A careful analysis of the meningitis cases reported through various agencies to this Bureau, has been conducted with a view to securing more accurate diagnosis, so that we might be better informed of the true number of cases of tubercular meningitis, as distinguished from epidemic cerebro spinal meningitis, influenzal and other forms of meningitis.

Special studies of the age group of measles have been made.

In connection with the epidemic of influenza, a variety of charts and records were kept which were of the utmost value in giving us an index of the rate of prevalence and of the mortality rate of this disease from day to day, and from week to week. These are a few examples of the varied activities in the field of epidemiological work which we assumed in this Bureau, during a most trying period without added clerical staff, and without any medical supervision other than that which the Director himself exercised.

Notwithstanding these numerous additions to the work of the Bureau, much has been done in the way of improving the efficiency of our records, history forms, charts, and methods of procedure for the closer supervision of typhoid fever cases, for the prompt and more accurate discovery of sources of infection, and for dealing with what is the most important part of the typhoid fever problem, the carrier.

The reflections of the enlarged activities of the Division of Epidemiology not only in the field of typhoid fever but in connection with most of the other communicable diseases, will appear in the body of the report. It must be manifest to one who intimately studied the work of this Bureau that its chief activities during the year has been in the field of epidemiological study, namely, as a detector of the sources of infection and the distribution of

## ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

communicable diseases, and from this has resulted a more definite conception of the measures of prevention which were practicable and necessary.

The other important development in this Bureau has been in the field of venereal disease prevention. The war has given an impetus to this branch of public health service throughout the country, but the City of New York by virtue of its enormous population has had to deal with a problem of greater magnitude in this field, and also because of the innumerable agencies and of citizen groups who are sensitive with respect to activities carried on in this field of work, the development of our venereal disease program has been a very delicate and difficult matter. With out additional staff, our forces have been so adjusted that we have been able to establish a clinic in the Women's Court, in which several thousand women are examined during the year, and smears and blood obtained in each case for examination of the presence of venereal disease.

We have worked out a system of forcible detention of infected women who are found in the course of our court work, or who are released from the Workhouse, when we have discovered the presence of venereal disease. We have also established treatment clinics, two of which are working with particular effectiveness, despite very great handicaps. The varied activities in the field of venereal disease control work will be subsequently described in detail.

### *Pulmonary Tuberculosis.*

At the beginning of 1919, 32,048 cases of pulmonary tuberculosis were on register in the Bureau of Preventable Diseases. During the year 14,570 new cases were reported by private physicians and hospitals or discovered by tuberculosis clinics of this Bureau.

A total of 7,395 persons died from this disease during the year, a mortality rate of 123 per 100,000.

Deducting the number of deaths and the number of cases which moved away from the City of New York, as also those which could not be located, and the homeless, we had on register in the Bureau of Preventable Diseases on the last day of the year 1919, 30,036 cases.

The number of deaths per thousand of population from pulmonary tuberculosis, which, practically speaking, has steadily declined in the last two decades, showed a very marked diminution during the year 1919. The actual number of deaths from this disease was smaller than at any time since the consolidation of the city in 1898. In other words, with an increase of population of at least 70% since the Greater City was consolidated, the mortality rate from pulmonary tuberculosis which was 237 per 100,000, has been reduced to a rate of 123 per 100,000. If the mortality rate which had prevailed when the Greater City of New York was consolidated, were to have prevailed in 1919, we would have had approximately 14,236 deaths instead of 7,395 from pulmonary tuberculosis. This gives the measure in

## BUREAU OF PREVENTABLE DISEASES

the change in the prevalence and in the mortality rate from pulmonary tuberculosis, which has been brought about by varied influences, chief among which are to be accounted the greater effectiveness of public health work, the improvement of the housing conditions in the City of New York, and the general economic improvement.

The marked reduction in the prevalence of tuberculosis and in the mortality rate from that disease, has not been confined to the City of New York, but has been recorded quite generally throughout the country.

In several particulars, the record of cases of pulmonary tuberculosis during the year 1919, has differed from preceding years.

The number of cases which were under the care of private physicians in 1918 was 3,107; in 1919, the number of cases under the care of private physicians was 3,697. In our experience, this is a very marked increase in the private physicians' cases, and in the opinion of those who have watched these cases carefully, it seems to be due to the fact that money was more plentiful among a number of the patients who under the economic conditions which normally prevailed in other years, would have come to the clinics for free treatment in larger numbers.

The number of cases registered as under the care of private physicians, is by no means an accurate index of the relative importance of the general practitioner in the prevention and treatment of tuberculosis. While only a little more than 10 per cent. of the total number of registered cases are under the care of private physicians, it must not be overlooked that the medical profession of this city, either in their private offices or in connection with their services in hospitals or dispensaries, must assume the burden of discovering pulmonary tuberculosis in a multitude of clinical cases as to which they are consulted in one or another capacity. The medical profession, in other words, is the first line of defense upon whom the Health Department must place absolute dependence for the discovery of cases of pulmonary tuberculosis. All students of the subject of tuberculosis prevention and control are agreed that the early discovery of cases of pulmonary tuberculosis is fundamental.

The administrative measures exercised by the Health Department in supervising and controlling cases of pulmonary tuberculosis, are predicated largely on the work of the private physician. It is therefore obvious that every general practitioner in the community, whether he admits it or not, is in fact a Health Officer upon whose ability to diagnose the early as well as the late cases of pulmonary tuberculosis—as of other preventable diseases—and upon whose willingness to co-operate actively and intimately with the Health Department, the control of tuberculosis in large measure depends. This is not a novel suggestion. Nevertheless, it seems to be constantly overlooked by the medical profession, as by the rest of us, that it stands in close relation to the public health work of the community; it



## ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

should be and is a badge of distinction. Although too frequently forgotten, every physician in the community in entering upon the practice of medicine, has accepted a social contract whose terms are implied or explicit.

The role of the private physician as an active friend and ally of the Health Department, working in concert with it for the public welfare, has not been sufficiently emphasized. The many difficulties preventing closer affiliation which have been responsible for breeding misunderstandings that have not infrequently bordered on open hostility, are in large measure inherent in the system of individualistic practice of medicine, which separates the great mass of the medical profession from those who have accepted a direct and specific contract to render public medical service.

These observations on the role of the private physician are inspired not only by a desire to pay a deserved tribute to the work of the medical profession as an agency in public health work, but to indicate the necessity of closer affiliation and preparation of a program of joint action by the Health Department and by private physicians, either individually or through their organizations, which will make more effective the services rendered by the respective groups to the public at large.

At the end of the year, there remained 4,556 cases of pulmonary tuberculosis in the various hospitals and sanatoria which accept tuberculous residents of this City.

At the beginning of this year, there were 4,775 cases in city institutions. During the last two years, there has been a very decided diminution in the number of admissions to hospitals and sanatoria for the care of the tuberculous.

At the end of the year 1918, we had on record in this Bureau 9,479 tuberculous persons who belonged to the vagrant or homeless types, or who had disappeared from observation and could not be traced. At the end of 1919, we had only 6,934 such cases. In other words, we had a reduction of 3,145. This is not accounted for by any unusual method or procedure for tracing the homeless and not found cases. It would seem reasonable to assume that improved economic conditions accounted to a considerable degree for this decided reduction in the homeless and "not found" cases.

At the end of the year there remained 10,817 cases of tuberculosis which were either receiving treatment at one of the tuberculosis clinics of the Health Department, or were under observation by the nurses of the Health Department in order to insure their observance of sanitary precautions. This is an increase of 291 cases in this classification, as contrasted with the preceding year.

Of those registered as suffering from tuberculosis at the end of the year, 27,902 were persons above 16 years of age; 160 were children under 5 years; and 1,974 were children between the ages of 5 and 16. This is

## BUREAU OF PREVENTABLE DISEASES

of course a very crude presentation of the age distribution of registered cases of pulmonary tuberculosis, but these are the best figures available under present circumstances, and they are presented because they are not without interest.

Out of a total of 30,036 cases of pulmonary tuberculosis on register at the end of the year, 9,675 were recorded as having positive sputum. By and large, these positive sputum cases are under three different types of supervision.

First, a moderate number are under the supervision of private physicians, who, in reporting cases, explicitly request that no nurse or other representative of the Health Department shall at any time visit their patients, the assumption being that the private physician will make personal visits to the home and expressly supervise the sanitary conditions under which such patients live, and report any circumstances surrounding such patient, which constitute a menace to others. This at least is the assumption. Clearly, this delegation of function to private physicians is a most important one and directly concerns community welfare.

Second, the non-departmental tuberculosis clinics of Bellevue, Lenox Hill, Gouverneur, Harlem, Mt. Sinai, New York, Presbyterian, and St. Luke's Hospitals, and of the Vanderbilt and New York Dispensaries, are permitted to keep the cases of pulmonary tuberculosis which attend their respective clinics, under the supervision of nurses attached to those clinics, the assumption being that whenever any conditions which may constitute a menace to the health of others, are observed by representatives of these private clinics, such facts will at once be reported to the Health Department. Because of the lack of a uniform method of reporting such conditions, we have considered requiring each of these clinics to submit at regular intervals an official statement for each case under the care of such private clinic, informing this Department whether or not sanitary precautions are observed, giving the date of visit, and indicating whether or not the circumstances disclosed by the last visit made to a given case indicated the necessity for action on the part of the Health Department in the enforcement of laws for the better protection of the public.

Third, the Health Department representatives exercise sanitary supervision over cases of pulmonary tuberculosis, sending nurses into the homes to instruct patients to observe sanitary precautions, to enforce the rules and regulations of the Department, if necessary, to stimulate the patient to continue under the care of a private physician or clinic, to secure the examination of all members of the family in contact with a tuberculosis individual, and to render such social, charitable or other form of assistance as may be indicated in any given case.

The three agencies enumerated, divide among themselves the official control of all cases of pulmonary tuberculosis which remain at home in the City of New York, the first two exercising a public health function which



## ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

is delegated to them by the Health Department, first, because the Health Department has not at its disposal an adequate number of nurses to do the work unaided, and second, because in the case of private physicians in particular, the Health Department recognizes the rights and privileges of private physicians, not merely to minister to the medical needs of the patient but to serve as counselor, guide and adviser for the entire family so as to prevent the spread of disease.

The use of the big stick and the exercise of summary police powers by the Health Department has in late years fallen into great disfavor. In the majority of cases, the necessity of taking coercive action against individuals suffering from communicable disease, and forcing them into Health Department hospitals, has been deemed a confession of failure. But there are a certain group of individuals with whom persuasion even though it come from the tongues of angels is not effective in securing compliance with the regulations of the Health Department. It is necessary therefore, for disciplinary purposes, and in the interest of public welfare, to remove individuals who will not or cannot observe the rules and regulations of the Health Department, to a hospital and to detain them there so as to prevent the spread of communicable disease.

During the year, Riverside Hospital was given over to the care of drug addicts. In previous years, it had been the place where we had kept under compulsory detention flagrant offenders against the law or those who were vagrants, homeless, or otherwise unable to properly care for themselves, so as to prevent the spread of disease from which they might be suffering.

Only two cases of pulmonary tuberculosis were forcibly detained during the year.

About twenty-five persons who had been under compulsory detention prior to the installation of the drug addict treatment service at Riverside Hospital, were released when the drug addict work was begun.

During the year there were 1647 deaths from pulmonary tuberculosis in which no record of a previous report of the disease to the Health Department could be found. These cases were in a number of instances shown to be due to the failure on the part of private physicians or hospitals to comply with the requirements of the Sanitary Code in promptly reporting all cases of communicable disease. We were under the painful necessity of resorting to legal action in a few cases. Others were satisfactorily explained and it was shown in many that the failure to report was due to misapprehension on the part of the physician in attendance, or to circumstances beyond his control,—namely, being called for the first time to treat a patient who was already moribund,—or that extenuating circumstances of equal validity were proved to have existed. This is a very important part of our work which has been more largely responsible for the prompt reporting of pulmonary tuberculosis than any other measure or procedure adopted by the Health Department.

## BUREAU OF PREVENTABLE DISEASES

The nurses of the Health Department are called upon during the year to answer complaints of citizens and private physicians, or they discover through their own visitation conditions which indicate that a patient has deliberately or through force of circumstances violated the sanitary regulations of the Department, or is living under conditions which are a menace to the health of others. These types of cases calling for a rigorous and intensive supervision by the nurses of the Department, are designated "sanitary supervision cases." In the course of the year, there were 9903 special visits of this character by the nurses of this Bureau, who were required to make them with a view to taking action to secure the abatement of a condition or practice which was inimical to the public health. At the end of the year, there were 654 cases still under sanitary supervision. In other words, at a given moment we have approximately 600 or more cases of this type, which require concentrated and constant attention of the nurses.

In 3811 cases where the condition of premises following the removal or death of a patient made it necessary to renovate such apartment, by thorough cleaning or scrubbing of floors, woodwork and walls, or of painting, papering, etc., such renovation was performed voluntarily upon the request of the Health Department nurse. In 75 cases, resort had to be had to legal orders to enforce compliance with this regulation.

Peculiarly enough, the only instances in which the various units of the Bureau reported that it was necessary to resort to legal action were in the Bedford and Brownsville sections of Brooklyn.

### *The Health Department's Tuberculosis Clinics.*

The work of the respective clinics differs greatly in the different boroughs and in different districts. The problems presented in each case are influenced to a very considerable degree by the character of the population, the location of the clinic, its personnel, and the methods employed by those in charge of the respective clinics.

The cases treated in our clinics are divided into two general classifications. First, those which are held for observation and which are described in the tabulation (Form 1) under the heading of "Non-diagnosed cases" and second, those cases in which a diagnosis of tuberculosis has been made. At the beginning of the year there were 3,044 patients who were still under observation for purposes of diagnosis. A total of 15,423 new cases applied at our respective clinics for examination. It is interesting to record the difference in the various boroughs. In the Borough of Manhattan, there were 7,549 such applicants; in the Borough of The Bronx, 1,803; in Brooklyn, 5,277; in Queens, 690, and in Richmond, 104.

The two most active clinics in the city were Jefferson Clinic situated in the Italian district on the upper east side of Harlem in the Borough of Manhattan with 1,989 new cases; and Prospect Clinic situated at Fleet

and Willoughby Streets in the main office of the Department in Brooklyn with 1,774 cases. Next in the order of numerical importance come Corlears on the lower east side of Manhattan, with 1,456 new cases; then Stuyvesant, a little further north, but also on the east side of Manhattan with 1,364 cases; then the Eastern District Clinic situated in the Williamsburg section of Brooklyn with 1,250 (in this district the population is large); the sixth in numerical importance is Chelsea Clinic on the middle west side of Manhattan with 1,088 cases; the remaining clinics vary in importance.

In addition to the number of new applicants for examination and treatment, there returned to the clinic 5,932 cases, who during the preceding years had discontinued attendance at the respective clinics while they were under observation for purposes of diagnosis. In other words, there was a total of 21,355 cases which were virtually new cases that applied at the various tuberculosis clinics of this Bureau for diagnosis and care. Of this number, 14,228, that is practically two-thirds, were discharged as non-tuberculous.

Annually, a number of individuals who apply to the clinics for diagnosis, discontinue their attendance before the necessary tests and examinations have been concluded for purposes of diagnosis. During the year 1919, 3,943 individuals discontinued attendance in this fashion. This is, however, a reduction of 1,272 such cases as contrasted with the preceding year.

Of a total of 24,399 persons who applied to us for diagnosis or who were under observation at the beginning of the year, we found 3,033 or a little over 12 per cent. suffering from pulmonary tuberculosis.

At the end of the year, out of a total of 24,399 persons who had been under observation for diagnosis, 2,710 cases still remained undiagnosed.

At the beginning of the year, there were 2,888 cases of pulmonary tuberculosis on register as under the care of the respective clinics of the Bureau. A total of 3,280 new cases was added to this number in the course of the year. In addition, there were also 3,687 returned cases of pulmonary tuberculosis which had either been discharged from institutions or who had returned after an interval to resume treatment at the clinics. All told there were 9,847 persons suffering from pulmonary tuberculosis under the care of our clinics during the year.

It is thus evident that the Health Department tuberculosis clinics directly served the needs of about 32 per cent of the 30,036 cases on register as having pulmonary tuberculosis. When it is remembered that the diagnosis and treatment of cases of tuberculosis is only one of numerous functions served by the respective tuberculosis clinics and branch offices of this Bureau, it will be seen that it is unjust to charge the cost of personnel and maintenance of these clinics against the service rendered the 9,847 patients who were treated in these clinics. The per capita cost per annum is frequently estimated on the assumption that the cost of maintenance of the

## BUREAU OF PREVENTABLE DISEASES

clinic and branch office is due solely to the work which is being done in the diagnosis and treatment of the 9,847 patients alluded to. Those critics of the tuberculosis health service whose chief concern seems to be the financial outlay which these clinics involve, overlook the great importance of having stations to which 24,399 persons came during the year for free diagnosis as to the presence of tuberculosis. As already stated, they also overlook the fact that these are administrative centers which are necessary to bring all phases of the Bureau's activities in connection with the control of all communicable diseases in the closest possible touch with the people of a given district. The clinics are used for venereal disease examination, for the Schick test, and some of them for the examination of foodhandlers and other special examinations which may from time to time be undertaken in the effort of furthering our preventive program.

Of the total number of tuberculosis cases under the care of our clinics, 932 were discharged as apparently arrested; 68 were transferred to clinics not under control of the Health Department; 1,100 entered hospitals; and 656 were sent to sanatoria. Cases discontinued for non-attendance numbered 4,188. A total of 212 persons under the care of our clinics as cases of pulmonary tuberculosis, died during the year.

A total of 7560 cases of pulmonary tuberculosis treated at our clinics were removed from the register during the course of the year, either because they had gone out of town or entered hospitals, disappeared from sight, or died. At the end of the year we had a total of 2,287 cases remaining under the care of our clinics. This is a decrease of 751 cases since the beginning of the year. Of these 2,287 cases, 2,083 were adults and 204 children. Patients having a positive sputum numbered 654, of whom 640 were adults and 14 children. There were 1,663 negative sputum cases divided between 1,443 adults and 190 children.

There were 10 cases of bone or glandular tuberculosis among adults and 42 among children who were under the care of our clinics. In connection with this phase of our tuberculosis activity, it has long been felt to be desirable and necessary that the Health Department should receive reports of all cases of bone, glandular, abdominal, or meningeal tuberculosis, so that we might be in a better position to realize the full extent of our tuberculosis problem in the city. It seems, therefore, that all forms of tuberculosis, in addition to the pulmonary type, should be made reportable by Sanitary Code amendment. The importance of requiring physicians and hospitals to report cases of non-pulmonary tuberculosis is evidenced by the fact that during 1919, there was a total of 1,103 deaths from non-pulmonary tuberculosis. Of this number, 581 deaths resulted from tuberculosis meningitis, and 522 from abdominal, glandular, and other types of tuberculosis. Bearing in mind that we had a total of 7,395 deaths recorded in the city as due to pulmonary tuberculosis, it will be seen that the proportion of



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deaths due to non-pulmonary tuberculosis is by no means small; in fact, these deaths from non-pulmonary tuberculosis were approximately 13 per cent. of the total number of deaths from tuberculosis reported during the year.

*Statistics of Clinics*—In the 20 clinics maintained by the Bureau in the various boroughs of the city, the total number of clinic sessions held during the year was 6598.

The total number of clinic hours during the year was 9784.

The total number of first visits of patients to the clinics was 15,527. This figure is of interest because in each case of a first visit, the examining physician is required to give a greater amount of time to the patient than is required when later visits are made.

The various types of patients under the care of these clinics made 69,631 revisits, or a total of 85,158 visits. While this total is less by 3065 than the number of visits made during 1918, it nevertheless compares favorably with that year because of the general falling off in the number of reported cases of pulmonary tuberculosis and in the number of cases under the care of the various hospitals and dispensaries.

The medical staff were required to visit the homes of patients for the purpose of making special investigations, or of giving bedside treatment to those who were unable to attend the clinic. The total number of such visits was 3586.

During the year, the nurses made 131,516 visits to cases of pulmonary tuberculosis under the supervision of the Health Department. Bearing in mind that this was a year which was marked by the recurrent wave of the influenza epidemic, and that the nurses in this Bureau had to bear the brunt of the field service, especially in giving bedside care to influenza and pneumonia patients and to bring them relief in many other ways, the records of visits made by nurses is a very favorable one.

*Hospital Facilities for Tuberculosis Children.* Difficulty was experienced during the year in placing boys and girls, particularly the former, who were suffering from incipient tuberculosis in appropriate institutions, because they require more care than do adults in the same stage of the disease. This is a difficulty which should be corrected. While the number of boys eligible for admission to a sanatorium is small, it is nevertheless important that they should not suffer for lack of proper institutional care.

*Hospital Diagnosis Station.* The Hospital Diagnosis Station was established by this Bureau during the last month of 1918, for the purpose of serving as a clearing house for the admission of cases to Otisville Sanatorium and Riverside Hospital. This Hospital Diagnosis Station has given a very excellent account of itself. The Department clinics sent 926 patients who had made application for Otisville; the non-department clinics and private physicians referred 343 patients; the total being 1269 applicants. Including those patients who had previously been inmates of Otisville, a

## BUREAU OF PREVENTABLE DISEASES

total of 1328 applicants were passed upon by the Hospital Diagnosis Station during the year. Of this number, 940 patients were accepted and 257 were rejected; 106, after making application failed to appear for examination. Out of a total of 1328 cases, 108 were referred to the Department of Public Welfare. In addition to the 1328 cases which were examined for admission to the Otisville Sanatorium, there were 130 applicants examined for admission to Riverside Hospital. In all, 190 patients were admitted to Riverside Hospital through the Hospital Diagnosis Station, and 58 were sent to Kingston Avenue Hospital. (See Table 2.)

Supervision of Lodging House Cases. The supervision of lodging house cases has always been most unsatisfactory, and has contributed little in actual results to warrant the expense of energy and time which it entailed. At the present time, whether because of the effects of prohibition or because of important economical conditions, many lodging houses are comparatively deserted. The Municipal Lodging House and other institutions have a daily census which is remarkably low. We have not had an adequate nursing staff to visit these cases. Unproductive as such visits are, they must nevertheless be conducted in the hope that we will be able to supervise a group in the community who are conspicuous as a source of infection not only to fellow inmates in lodging houses, but to various other groups in the community. Few as these cases have recently been, they constitute an important part of our problem in the control of tuberculosis. They are likely at any moment to increase in number. One remedy which deserves serious consideration is the forcible removal to a hospital of every lodging house case of pulmonary tuberculosis with positive sputum.



TABLE I.  
TUBERCULOSIS IN NEW YORK CITY, 1919.

## TUBERCULOSIS REGISTRATION.

Unit.	Added to Register.				Removed from Register.				Cases Remaining in Register.								Total Cases Remaining in Register.				
	New Cases.				Total Cases Added to Register.	Deaths.	Recovered.	Other Cases.	Total Cases Removed.	Private Physician.	Non-Dept. Clinics.	City Institution.	Out of Town.	Homeless and Not Found.	At Home and Dept. Clinics.	Adults.		Under 5 Years.	5 to 16 Years.		
	Total New Cases.			Received from Other Districts.																	
	Adults.	Under 5 Years.	5 to 16 Years.																		
In Register Beginning of Week.	Adults.	Under 5 Years.	5 to 16 Years.	Total New Cases.	Received from Other Districts.	Total Cases Added to Register.	Deaths.	Recovered.	Other Cases.	Total Cases Removed.	Private Physician.	Non-Dept. Clinics.	City Institution.	Out of Town.	Homeless and Not Found.	At Home and Dept. Clinics.	Adults.	Under 5 Years.	5 to 16 Years.	Total Cases Remaining in Register.	
Riverside.....	1,220	14	49	1,283	72	125	1,480	625	65	2,156	2,846	261	42	172	245	439	364	1,415	9	99	1,523
Chelsea.....	856	33	33	896	60	1,267	2,223	375	12	1,086	1,373	195	84	267	203	763	664	2,039	14	123	2,176
Jefferson.....	1,762	6	44	1,812	249	80	2,159	270	40	1,799	2,518	298	294	312	342	538	1,265	2,769	20	260	3,049
Yorkville.....	1,015	24	83	1,122	149	8	1,279	379	158	1,872	1,409	245	356	232	232	494	711	2,115	28	250	2,393
Stuyvesant.....	1,864	998	13	2,915	213	49	1,302	427	160	393	980	196	240	248	176	743	533	2,095	13	78	2,186
Corleaus.....	1,550	585	5	2,140	118	167	929	265	79	757	1,101	155	116	167	176	196	538	1,378	25	116	1,494
Washington.....	1,779	842	10	2,631	100	490	1,464	354	26	586	966	198	99	373	140	865	602	2,047	12	205	2,277
H. D. No. 1.....	106	22	..	128	3	1	26	4	..	1,329	1,333	..	17	1,550	23	839	37	2,467	..	..	2,467
H. A. B.—C. N. F.....	3,458	46	..	3,504	12	284	3,422	..	..	9,003	12,658	1,549	1,248	3,444	1,537	4,877	4,794	16,197	121	1,131	17,449
Manhattan.....	18,903	7,346	79	26,128	994	2,471	11,204	3,111	544	9,003	12,658	1,549	1,248	3,444	1,537	4,877	4,794	16,197	121	1,131	17,449
Mott Haven.....	1,270	566	14	22,602	40	44	686	337	76	261	674	185	..	131	139	164	663	1,210	2	70	1,282
Tremont.....	2,177	1,001	..	3,100,9	45	82	1,136	385	73	554	1,012	439	..	151	243	337	1,131	2,239	..	62	2,301
Bronx.....	3,447	1,567	14	30,161	85	126	1,822	722	149	815	1,686	624	..	282	382	501	1,794	3,449	2	132	3,583
Eastern District.....	1,125	592	10	43,645	54	65	764	349	143	361	853	213	..	139	114	184	386	971	5	60	1,036
Bedford.....	2,100	921	6	58,985	55	104	1,144	591	119	574	1,284	335	..	147	182	391	905	1,771	12	177	1,960
Brownsville.....	1,522	436	2	21,459	41	58	558	201	91	295	587	151	..	62	118	356	806	1,361	2	130	1,493
Bay Ridge.....	537	315	3	17,335	49	21	403	183	46	141	370	103	..	39	89	93	268	562	2	28	592
Prospect.....	1,039	1,161	6	37,120	91	43	1,388	782	97	859	1,738	274	..	223	124	308	610	1,393	8	138	1,539
Parkville.....	458	286	2	3,291	25	65	381	163	21	154	338	99	..	47	81	75	199	481	..	20	501
C. N. F.....	91	..	..	..	..	..	..	..	..	..	..	54	..	16	6	10	5	90	..	1	91
Brooklyn.....	7,792	3,711	29	179,391	315	356	4,590	5,170	517	2,384	5,170	1,229	..	673	714	1,417	3,179	6,629	29	554	7,212
Jamaica.....	501	129	..	1,188	18	50	197	234	100	..	..	100	..	27	27	38	272	425	4	35	464
Plaza.....	187	87	..	1,992	1	22	211	133	5	86	214	80	..	25	42	28	332	461	..	46	507
Corona.....	314	82	1	9,921	3	8	111	78	..	64	142	15	..	34	21	37	176	248	1	34	283
Ridgewood.....	329	113	..	5,118	3	24	145	105	24	74	203	63	..	17	15	18	158	239	2	30	271
Queens.....	1,654	511	1	527	33	104	664	457	42	294	793	258	..	103	105	121	938	1,373	7	145	1,525
Richmond.....	252	165	1	6,172	2	17	191	109	12	55	176	37	..	54	36	18	122	254	1	12	267
City.....	32,048	13,300	124	54,968	1,429	3,074	18,471	6,668	1,264	12,551	20,483	3,697	1,248	4,556	2,774	6,934	10,827	27,902	160	1,974	30,036

## BUREAU OF PREVENTABLE DISEASES

TABLE 1—Continued.  
TUBERCULOSIS IN NEW YORK CITY, 1919—Continued.

TUBERCULOSIS REGISTRATION.										TUBERCULOSIS CLINICS.										
Unit.	Number of Cases with Pos. Sputum.	Forcible Removals.	Deaths Not Previously Reported.	Under Sanitary Supervision.	Voluntary Renovations.	Enforced Renovations.	Added to Register.				Removed from Register.						Remaining in Register.			
							In Register at Beginning of Year.	New Cases Admitted.	Readmitted for Diagnosis.	Total Added.	Discharged—Not Tuberc.	Transferred to Dept. Clinic.	Trans. to Non-Dept. Clinic.	Discont. for Non-Attend.	Died.	Found Tuberculous.	Total Cases Removed.	Adults.	Children.	Total.
Riverside.....	583	...	217	9	336	...	76	474	51	475	95	11	52	141	4	141	444	30	77	107
Chelsea.....	445	...	124	14	328	...	712	1,088	373	1,461	377	6	946	946	6	299	1,634	273	266	539
Jefferson.....	920	...	270	12	328	...	485	1,989	1,377	3,366	2,910	3	72	201	2	190	3,378	194	279	473
Yorkville.....	455	...	141	10	607	...	121	1,594	209	803	511	6	28	122	2	191	1,860	28	36	64
Stuyvesant.....	672	1	98	12	167	...	188	1,364	460	1,824	1,353	5	34	331	1	165	1,855	87	70	157
Corlears.....	323	...	68	55	94	...	270	1,456	1,222	2,678	1,885	53	482	4	4	216	2,674	199	75	274
Washington.....	479	...	136	18	137	...	401	634	348	982	311	11	7	664	4	72	1,069	83	231	314
H. D. No. 1.....	...	...	1	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
H. A. B.—C. N. F.....	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Manhattan.....	3,882	1	1,057	130	1,801	...	2,253	7,519	4,040	11,589	7,442	95	193	2,887	23	1,274	11,914	894	1,034	1,928
Mott Haven.....	436	...	16	28	142	...	201	894	237	1,131	956	4	1	42	2	185	1,190	96	46	142
Tremont.....	2,228	...	165	115	282	...	105	909	488	1,397	908	4	...	278	...	211	1,401	79	22	101
Bronx.....	2,664	...	181	143	424	...	306	1,803	725	2,528	1,864	8	1	320	2	396	2,591	175	68	243
Eastern District.....	386	...	39	33	156	...	40	1,250	444	1,694	1,547	4	...	5	1	144	1,701	27	6	33
Bedford.....	633	...	60	180	238	...	50	978	164	1,142	786	9	...	52	...	300	1,147	28	17	45
Brownsville.....	369	...	16	78	393	...	84	960	318	1,278	613	5	...	416	...	230	1,264	62	36	98
Bay Ridge.....	229	...	31	36	119	74	2	207	35	242	153	2	...	14	1	66	236	4	4	8
Prospect.....	664	...	135	32	203	...	92	1,774	57	1,831	1,249	128	3	...	...	414	1,794	74	55	129
Parkville.....	289	...	31	9	76	...	14	108	31	139	82	2	...	23	...	29	136	13	4	17
C. N. F.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Brooklyn.....	2,570	...	312	368	1,185	75	282	5,277	1,049	6,326	4,430	150	3	510	2	1,183	6,278	208	122	330
Jamaica.....	150	...	22	4	210	...	21	186	17	203	112	3	...	37	...	48	200	11	13	24
Flushing.....	159	...	10	...	2	...	49	155	26	181	91	1	...	70	...	50	212	6	12	18
Corona.....	66	...	14	3	45	...	47	119	31	150	43	1	...	74	...	19	157	20	20	40
Ridgewood.....	94	...	28	1	...	...	43	230	26	256	152	3	...	24	...	35	214	5	80	85
Queens.....	467	...	74	8	257	...	160	690	100	790	398	8	...	225	...	152	783	42	125	167
Richmond.....	112	2	23	5	144	...	43	104	18	122	94	...	...	1	...	28	123	16	26	42
City.....	9,675	3	1,647	654	3,811	75	3,044	15,423	5,932	21,355	14,228	261	197	3,943	27	3,033	21,689	1,335	1,375	2,710

TABLE 1—Continued.  
TUBERCULOSIS IN NEW YORK CITY, 1919—Continued.

TUBERCULOSIS CLINICS.																			
Diagnosed Cases.																			
Unit.	In Register Beginning of Year.	Added to Register.				Removed from Register.							Remaining in Register.						
		New Cases.	Old Cases Readmitted.	Total Added.	Disch. App. Arrested.	Transferred to Dept. Clinic.	Trans. to Non-Dept. Clinic.	Entered Hospital.	Entered Sanitarium.	Discont. for Non-Attend.	Died.	Total Removed.	Adults.		Children.		Total.		
													Pos. Sput.	Neg. Sput.	Pos. Sput.	Neg. Sput.	Pos. Sput.	Neg. Sput.	
Riverside.....	55	138	35	173	1	5	11	58	36	62	4	177	18	30	1	2	19	32	51
Chelsea.....	238	297	153	450	4	7	14	110	70	337	21	549	48	69	4	22	48	91	139
Jefferson.....	293	193	425	618	302	5	14	95	53	280	24	773	51	69	4	14	55	83	138
Yorkville.....	87	199	154	353	28	6	30	61	31	163	3	322	29	79	1	10	29	89	118
Stuyvesant.....	188	171	297	468	137	23	1	83	41	176	43	504	73	77	1	1	74	78	152
Corleaus.....	167	220	376	596	56	55	8	95	54	291	4	563	30	167	2	3	30	170	200
Washington.....	93	134	129	263	24	12	12	86	22	147	9	300	21	27	2	6	23	33	56
H. D. No. 1.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
H. A. B.—C. N. F.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Manhattan.....	1,121	1,352	1,569	2,921	552	113	64	588	307	1,456	108	3,188	270	518	8	58	278	576	854
Mott Haven.....	214	187	232	419	30	17	.....	58	32	297	16	450	74	88	1	20	75	108	183
Tremont.....	173	248	335	583	44	12	.....	53	40	433	5	587	48	112	1	8	49	120	169
Bronx.....	387	435	567	1,002	74	29	.....	111	72	730	21	1,037	122	200	2	28	124	228	352
Eastern District.....	126	232	242	474	92	24	1	65	35	260	16	493	30	67	.....	10	30	77	107
Bedford.....	230	301	362	663	54	36	.....	81	51	431	10	663	43	156	.....	31	43	187	230
Brownsville.....	307	230	604	834	48	29	1	44	64	701	.....	887	32	203	.....	19	32	222	254
Bay Ridge.....	44	72	47	119	16	7	.....	23	25	50	5	126	22	12	1	2	23	14	37
Prospect.....	268	414	129	543	43	120	1	153	52	151	25	545	80	170	2	14	82	184	266
Parkville.....	47	52	37	89	18	8	.....	11	12	48	10	107	7	19	1	2	8	21	29
C. N. F.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Brooklyn.....	1,022	1,301	1,421	2,722	271	224	3	377	239	1,641	66	2,821	214	627	4	78	218	705	923
Jamaica.....	42	50	34	84	9	14	.....	8	6	53	1	91	4	29	.....	2	4	31	35
Plaza.....	110	48	33	81	2	3	.....	9	9	117	6	146	9	25	.....	11	9	36	45
Corona.....	81	23	30	53	2	1	.....	3	9	83	4	102	5	23	.....	4	5	27	32
Ridgewood.....	107	45	26	71	20	8	.....	5	7	104	4	148	12	14	.....	4	12	18	30
Queens.....	340	166	123	289	33	26	.....	25	31	357	15	487	30	91	.....	21	30	112	142
Richmond.....	10	26	7	33	2	2	1	9	7	4	2	27	4	7	.....	5	4	12	16
City.....	2,880	3,280	3,687	6,967	932	394	68	1,110	656	4,188	212	7,560	640	1,443	14	190	654	1,663	2,287

## BUREAU OF PREVENTABLE DISEASES

TABLE 1—Continued.  
TUBERCULOSIS IN NEW YORK CITY, 1919—Continued.

TUBERCULOSIS CLINICS.																	
Unit.	Bone, Joint and Miscellaneous Cases of Tuberculosis.		Number of Clinic Physicians.	Number of Clinic Sessions.	Number of Clinic Hours.	Number of Visits of Patients.			No. of Visits per Clinic Hour.	Number of Physical Examinations.			No. of Examinations per Clinic Hour.	Number of Prescriptions.	Visits by Clinic Physicians.		
	Adults.	Children.				Primary.	Revisits.	Total.		Primary.	Re-exam.	Total.			Branch Office Cases.	Clinic Cases.	Total Visits.
Riverside.....	2	4	3	441	645	429	1,961	2,390	...	476	1,826	2,302	...	2,195	44	73	117
Chelsea.....	3	3	6	401	683	1,078	2,473	6,551	...	1,084	3,779	4,863	...	7,101	38	6	44
Jefferson.....	3	2	2	469	576	1,989	7,528	9,517	...	3,139	7,952	11,091	...	9,722	115	359	474
Yorkville.....	2	2	2	395	733	906	2,993	3,589	...	507	2,087	2,684	...	3,774	13	227	256
Stuyvesant.....	1	1	7	512	733	1,364	4,629	5,993	...	1,684	2,342	4,026	...	4,838	65	727	792
Corlears.....	6	3	3	402	581	1,455	5,825	7,280	...	1,456	3,086	4,542	...	5,937	11	161	172
Washington.....	...	...	...	406	590	674	4,312	4,986	...	955	1,965	2,920	...	6,322	30	180	186
H. D. No. 1.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
H. A. B.—C. N. F.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Manhattan.....	5	20	...	3,026	4,487	7,585	32,721	40,306	...	9,391	23,037	32,428	...	39,889	316	1,719	2,035
Mott Haven.....	2	11	4	358	508	894	7,242	8,136	...	892	3,717	4,609	...	5,479	9	117	126
Tremont.....	...	...	4	393	577	914	3,834	4,748	...	995	3,535	4,530	...	5,565	2	35	37
Bronx.....	2	16	...	751	1,085	1,808	11,076	12,884	...	1,887	7,252	9,139	...	11,044	11	152	163
Eastern District.....	...	...	5	351	548	1,204	3,060	4,324	...	2,455	3,523	5,978	...	4,280	12	185	197
Piedmont.....	2	1	5	356	548	988	4,617	5,605	...	1,726	2,425	4,151	...	8,128	13	334	347
Brownville.....	...	...	7	347	542	947	5,256	6,217	...	1,772	3,334	4,366	...	6,747	27	332	379
Bay Ridge.....	...	...	1	150	231	214	690	904	...	3,244	3,613	6,257	...	8,044	2	10	12
Prospect.....	1	1	5	454	618	1,772	5,869	7,641	...	108	219	327	...	857	2	355	357
Parkville.....	...	...	...	203	298	110	456	566	...	...	...	...	...	...	...	...	...
C. N. F.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Brooklyn.....	3	2	...	1,861	2,785	5,309	19,948	25,257	...	9,515	12,564	22,079	...	29,348	58	1,236	1,294
Jamaica.....	...	...	1	200	286	190	914	1,104	...	194	422	616	...	1,369	...	5	5
Plaza.....	...	...	2	185	287	166	965	1,131	...	169	477	646	...	1,229	5	8	13
Corona.....	...	...	1	173	269	133	943	1,078	...	128	331	459	...	1,493	...	1	1
Ridgewood.....	...	...	2	252	256	231	2,470	2,501	...	231	323	554	...	3,066	...	1	1
Queens.....	...	...	...	810	1,198	720	5,094	5,814	...	722	1,553	2,275	...	6,157	5	15	20
Richmond.....	...	4	1	150	229	105	792	897	...	105	381	486	...	1,197	14	60	74
City.....	10	42	...	6,598	9,784	15,527	69,631	85,158	...	21,020	44,787	66,407	...	87,635	404	3,182	3,586

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TABLE 2.  
WORK OF HOSPITAL DIAGNOSTIC STATION, 1919.

	Department Clinic.	Non-Dept. Clinic.	Private Physician.	Total.
New applicants.....	926	265	78	1,269
Applicants for re-admission.....	50	7	2	59
Accepted.....	715	181	44	940
Rejected.....	196	41	20	257
Refused examination.....	81	22	3	106
Awaiting decision.....	4	2	0	6
Awaiting examination end of year.....	12	4	3	19

Number of cases examined.....	1,203
Number referred to H. A. B.....	108
Number referred for X-ray.....	23
Number awaiting decision.....	6

	Men.	Women.	Boys.	Girls.	Total.
Accepted during year.....	577	244	59	60	940
Admitted.....	501	202	29	53	785
Refused to go—taken off list.....	42	29	2	5	78
Rejected by Otisville Physician.....	16	3	0	0	19
Remaining on waiting list.....	18	10	28	2	58

Number of applicants for Riverside Hospital.....	130
Rejected for Otisville, recommended for Riverside Hospital.....	60
Permits for Riverside issued.....	190
Permits for Kingston Avenue Hospital issued.....	15

TABLE 3.  
PREVALENCE, MORTALITY AND CASE FATALITY RATES OF PULMONARY  
TUBERCULOSIS DURING 1919.

	Cases in Register.	Cases per 1,000 of Population.	Deaths.	Deaths per 1,000 of Population.	Cases Fatality Per Cent.
Manhattan.....	17,449	6.28	3,597	1.29	.20
Bronx.....	3,583	5.55	920	1.42	.25
Brooklyn.....	7,212	3.48	2,252	1.09	.31
Queens.....	1,525	3.75	474	1.17	.31
Richmond.....	267	2.58	152	1.47	.56
City.....	30,036	5.00	7,395	1.23	.24



## BUREAU OF PREVENTABLE DISEASES

### *Communicable Diseases.*

Excluding influenza and pneumonia, which naturally overshadowed all the other communicable diseases in significance during the year 1919, a great deal that is of interest and importance can be elicited from a review of the incidence of the commoner communicable diseases.

#### *Diphtheria*

In the publication notices which this Bureau has prepared with reference to diphtheria, we emphasized the fact that notwithstanding the enormous saving of lives which has resulted from the use of diphtheria antitoxin since the time of its introduction in 1884, this disease has commanded a place of great importance as one of the significant causes of infant and child mortality. We emphasized the fact that approximately 12,000 cases were reported to us annually. Our argument could have been made more forcible by the citation of the total number of cases of diphtheria which were reported during the year 1919, namely, 14,014 as against 11,455 cases reported during 1918. While it is true that the year 1918 was signalized by the intensity of the influenza and pneumonia epidemic and that coincident with this intensity of the latter diseases, the commoner communicable diseases showed a very much lower prevalence than normal, nevertheless the increase in the reported number of cases of diphtheria during 1919, is greater than normal, at least in the sense that the steady reduction in mortality per 100,000 of population which had been noticeable up to 1918, has been interrupted. During 1919, the number of cases of diphtheria per hundred thousand of population showed a fairly large increase.

Whereas, in 1917, we had 220 cases per hundred thousand of population, and in 1918, only 190 cases per hundred thousand of population, in 1919, we had 233 cases per hundred thousand of population. Fortunately, there was no increase in the mortality rate per hundred thousand of population. In other words, we apparently had an incidence of diphtheria which was greater than normal possibly because there had developed susceptible material by reason of the lowered incidence in the preceding year.

How much more serious this disease is than some of the others, can best be seen by a comparison of the total number of deaths resulting from diphtheria and from some of the other of the commoner communicable diseases. There were 1,239 deaths from diphtheria in 1919, as contrasted with 136 deaths from scarlet fever, 218 from measles, 161 from whooping cough, 121 from typhoid fever, 171 from cerebro spinal meningitis, and 15 from acute anterior poliomyelitis. It will thus be seen that as a direct cause of death, excluding influenza and pneumonia, diphtheria ranks second to pulmonary tuberculosis. But it should be remembered that the 7,395 deaths from pulmonary tuberculosis which occurred during the year 1919, were distributed over all age groups; whereas, the 1,239 deaths from diphtheria, as also the deaths from the other commoner communicable diseases, except



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typhoid fever, were practically limited to children under 15 years of age. If, therefore, we could with assurance calculate the number of children under 15 in the City of New York, we would find that the number of deaths from diphtheria per hundred thousand of *children*, would make this disease assume an even larger importance when compared with the number of deaths per hundred thousand of the general population caused by pulmonary tuberculosis.

The Department of Health during the year 1919, at the special urging of the Bureau of Preventable Diseases, capitalized the experience and the scientific research splendidly carried out by the Bureau of Laboratories, by putting the Schick test and active immunization into practical use as an everyday preventive measure, to be applied by the Health Department and by the private physicians of New York. Surely, this was a most justified and necessary step in the prevention of a disease which may well strike terror in the hearts of parents and guardians of children.

In passing, it is well to call attention to the fact that while the rate of prevalence of diphtheria was 233 per hundred thousand of population in the city as a whole, the disease seemed to concentrate itself with greatest intensity in the Borough of The Bronx where there were 349 cases per hundred thousand of population. Next in the order of intensity came the Borough of Richmond, where there were 305 cases per hundred thousand of population. Third, the Borough of Queens with 285 cases per hundred thousand of population. Both the Boroughs of Manhattan and Brooklyn, the most populous boroughs of the city had only 212 cases per hundred thousand of population. In the Borough of The Bronx, the child population has grown very considerably. This was pointed out in a previous report. The influx of newly married couples in the Bronx where living conditions and rentals were, comparatively speaking, more satisfactory, would perhaps account for this phenomenon, at least to a considerable measure.

In this connection, the report of the experience of the Bureau with the application of the Schnick test, should be of definite value. In view of the fact that the Schnick test is the one truly hopeful and promising measure which will enable us to distinguish those children in the community who are susceptible to diphtheria, and upon whom active immunization should be practiced as a means of permanently removing susceptibility to diphtheria, it is well to record at this time the experience which we have had in this Bureau in connection with the application of the Schick test and active immunization, since May, 1919, to the end of the year (this test was put into effect as a practical preventive measure in May, 1919). See table 4, attached).

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## REPORT OF SCHICK TESTS AND ANTITOXIN INJECTIONS. FROM MAY, 1919, TO END OF THE YEAR. CASES TESTED.

Age.	Manhattan.			Bronx.			Brooklyn.			Queens.			Richmond.			City.			Results of Tests by Age. Percentage.	
	Pos.	Neg.	Total.	Pos.	Neg.	Total.	Pos.	Neg.	Total.	Pos.	Neg.	Total.	Pos.	Neg.	Total.	Pos.	Neg.	Total.	Pos- itive.	Nega- tive.
Up to 1 year.....	37	46	83	0	2	2	6	8	4	2	6	...	...	...	...	43	56	99	44	56
1 to 2 years.....	38	51	89	6	5	11	10	20	24	5	29	...	...	...	...	78	71	149	44	56
2 to 3 years.....	42	65	107	4	7	11	8	11	19	4	23	...	...	...	...	73	89	162	45	55
3 to 4 years.....	53	72	125	5	8	13	20	16	36	7	12	19	...	...	...	85	111	196	44	56
4 to 5 years.....	41	76	117	2	7	9	45	18	63	13	6	19	...	...	...	102	108	210	50	50
5 to 6 years.....	61	94	155	4	8	12	39	19	58	15	7	22	...	...	...	119	131	250	48	52
6 to 7 years.....	37	71	108	5	8	13	45	21	66	10	20	...	...	...	...	98	110	208	47	53
7 to 8 years.....	45	121	166	3	12	15	55	43	98	18	15	33	...	...	...	121	193	314	40	60
8 to 9 years.....	37	72	109	2	8	10	56	48	104	18	10	28	...	...	...	114	139	253	45	55
9 to 10 years.....	23	81	104	3	7	10	73	46	119	12	10	22	...	...	...	112	147	259	43	57
10 and over.....	70	258	328	8	23	31	259	166	425	46	87	...	...	...	...	388	492	880	45	55
Total.....	484	1,007	1,491	42	95	137	612	404	1,016	186	122	308	9	19	28	1,333	1,647	2,980	45	55
Percentage of Total.....	33	67	100	31	69	100	60	40	100	61	39	100	32	68	100	45	55	100		

### INJECTED WITH TOXIN-ANTI-TOXIN.

Doses.	Doses.				Doses.				Doses.				Doses.				Doses.						
	1	2	3	Total.	1	2	3	Total.	1	2	3	Total.	1	2	3	Total.	1	2	3	Total.			
Up to 1 year.....	29	24	15	68	..	1	..	1	5	4	1	10	12	11	10	33	46	40	26	112			
1 to 2 years.....	34	28	15	77	8	3	..	13	11	4	5	14	22	20	13	55	69	55	35	159			
2 to 3 years.....	43	38	13	84	1	3	11	12	11	12	8	31	16	18	14	48	77	77	38	174			
3 to 4 years.....	42	33	26	101	5	1	11	18	18	13	49	9	7	7	23	47	74	63	47	184			
4 to 5 years.....	40	21	18	79	5	1	0	5	27	18	11	56	11	8	7	56	82	48	26	156			
5 to 6 years.....	48	26	12	86	4	4	4	13	30	32	11	73	13	5	8	26	96	67	36	199			
6 to 7 years.....	41	19	12	72	4	3	0	7	49	26	19	94	8	6	4	18	102	54	35	191			
7 to 8 years.....	39	26	16	81	6	4	1	11	43	28	23	94	10	7	9	26	98	65	40	212			
8 to 9 years.....	39	18	12	69	5	3	1	9	67	49	25	141	10	6	7	23	121	75	35	232			
9 to 10 years.....	24	15	12	51	2	2	1	5	71	54	36	161	9	4	1	14	106	75	50	231			
10 and over.....	105	56	37	198	11	9	2	22	245	189	131	565	52	33	23	108	413	287	193	893			
Total.....	484	294	169	947	57	36	15	108	571	434	283	1,288	172	125	103	400	1,284	889	570	2,743			
Percentage found positive and given 1, 2 or 3 injections.....	100	50	35	185	100	81	36	217	93	71	46	210	93	67	55	215	..	..	..	96	66	43	205

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In the Borough of Manhattan we had 1,491 Schick tests; in the Borough of The Bronx, 137; in Brooklyn, 1,016; Queens, 308; Richmond, 28; and in the city as a whole, 2,980. With the exception of the Boroughs of Brooklyn and Queens, we found a positive Schick test reaction in one-third of our cases. In the Boroughs of Brooklyn and Queens, we found 60 per cent. positive cases among the children tested. For the city as a whole, therefore, we found 45 per cent. giving positive Schick test reaction and 55 per cent negative. The experience of the Boroughs outside of Brooklyn and Queens, is in keeping with that of the previous investigators who have found that, practically speaking, for all ages, one-third of the children were susceptible. It is difficult to say whether the large number of positive Schick tests reported in the Boroughs of Brooklyn and Queens was due to excessive caution in judging pseudo reactions and doubtful reactions. It is of course far better and safer to administer toxin-antitoxin for purposes of active immunization when there is the slightest vestige of doubt as to the interpretation of the Schick test, rather than take the chance of declaring a person immune to diphtheria on the basis of a Schick test reaction which is not definite. During the period in 1919 when the Schick test was applied, 2,743 children were actively immunized against diphtheria. Of this number, unfortunately not all received three immunizing doses.

The nurses did conspicuous service during the year in making a house to house canvass in many districts of the city to distribute literature in relation to the Schick test and to active immunization against diphtheria. Bearing in mind that our Schick test campaign was pioneer work hitherto unknown to the citizens of New York, we feel that to the nurses belongs the bulk of the credit for gaining the consent of parents to have this test applied to nearly 3,000 patients in this city in the course of a little over seven months. Undoubtedly, the relatively large number of Schick tests which are being performed by this time by the Bureau of Child Hygiene are in like fashion due to the efforts of the nurses of that Bureau. In every tenement house in which a case of diphtheria was reported from May, 1919, it has been the practice of the nurses of the Bureau of Preventable Diseases to distribute a circular to all families in such buildings, calling attention to the signal value of the Schick test and active immunization. During the year, the nurses of the Bureau of Preventable Diseases took 41,901 cultures from the throats of diphtheria children. Through their instrumentality, 2,609 exposed persons were given passive immunization with anti-toxin for the purpose of immediate protection. Of the 14,014 cases of diphtheria, 78 required constant supervision and the greatest vigilance, because of a tendency on the part of such families to violate the rules of quarantine. These were difficult cases to handle and required very many visits. Specific instructions as to quarantine and the proper isolation of the patient, and the observations of sanitary precautions were issued by the nurses of the Bureau in 13,169 cases. In 20 families, they gave nursing

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care to patients who would otherwise have been more or less neglected. In 24 cases, they secured charitable aid for the benefit of the families to help tide over financial difficulties which assumed special significance because of the presence of sickness in such families. In 28 families, the nurses were instrumental in bringing about very radical changes in housing conditions, obtaining employment, or otherwise improving the general social condition of the family. In 82 cases, we were able to persuade people who were intent upon keeping the patient at home, to send such patient into a hospital, because the financial condition of the parents, and the home conditions as well, militated against the proper treatment and care of the patient. In 1,929 cases, the nurses persuaded the landlords or tenants to voluntarily renovate premises which had been occupied by a diphtheria patient, causing more or less radical alterations and improvements in sanitary conditions to be effected. They were required to resort to legal action in order to secure complete renovation of premises occupied by patients in only five instances. They made a grand total of 81,804 visits to cases of diphtheria during the year, notwithstanding the tremendous burden of work imposed upon them by the necessity of tuberculosis visits, and by the visitation of the influenza and pneumonia epidemic which recurred during the year.

### *Scarlet fever.*

A total of 4,594 cases of scarlet fever was reported during the year 1919 as contrasted with 4,460 during 1918. According to the Health Department estimate of the population of the City of New York, this would signify that while there was an increase in the total number of cases reported during 1919, there was no increase in the number of cases per hundred thousand of population as contrasted with the preceding year.

There was a very decided reduction in the number of deaths from this disease during 1919, namely, 136 deaths as contrasted with 177 during 1918. This is in harmony with our experience in connection with this disease during the past several years. There has been practically an uninterrupted drop in the prevalence of scarlet fever and in the mortality rate in particular during the last twenty-one years when first we began to record statistical data with reference to this and to other communicable diseases for the Greater City of New York.

The cases of malignant type of scarlet fever which were described in the older textbooks and which one could from time to time see even fifteen years ago, are now extremely rare. While urban conditions have been thought at various times to have tended to create immunity against certain of the communicable diseases among the population in such communities, one wonders whether scarlet fever, whose cause is yet unknown but which seems likely to be related to some form of streptococcus infection, may not appear in modified form, as for instance, in a marked measles or pneumonia



epidemic, as a secondary complication, causing a large number of deaths from streptococcus infection. This is purely speculative, but it is well to bear in mind this cardinal fact, that the constant lowering in prevalence of any one of the communicable diseases, should not encourage us to relax our vigilance in the control and prevention of that disease so far as it lies within our power to do so. We should not be lulled into a sense of false security.

In the opinion of those who have analyzed figures relating to the incidence of scarlet fever, the marked reduction in the number of cases reported to the Health Department during the last several years, is not to be interpreted as being due to a lessened vigilance on the part of practitioners of this city or to mistaken diagnosis or failure to report cases. We are constantly on the alert to discover an undue incidence of deaths from acute nephritis or endocarditis among children, taking particular pains in all such instances to ascertain whether there was a preceding acute infection, resembling scarlatina.

In connection with scarlet fever, the nurses, while not called upon to do nearly as great a volume of work, as with diphtheria, were nevertheless very busily engaged in enforcing proper isolation and quarantine and the observation of sanitary precautions. While numerically the number of cases of scarlet fever was considerably less than the cases of diphtheria, this disease, however, is of so much greater duration in the average case that repeated visits were required.

The total number of visits made by the nurses of the Bureau was 30,203. In only five instances were they required to give bedside nursing to the patient of the same character as had been required in the case of the 20 diphtheria patients. An analysis of the record of nurses' work would indicate that in keeping with the times, the conception of their duty and the opportunities for service to the community, have been greatly widened so that they do not merely enforce the rules and regulations of the Health Department, but they are agents for improving conditions in the home and for ministering to the immediate needs of the patient and the family wherever communicable disease brings them into contact with such families. They aim to readjust the family under better housing conditions, to secure employment for those who may be out of work, to secure charitable aid for those who may require it, and to make themselves generally serviceable so that they may be known as "friendly visitors."

#### *Whooping Cough.*

The prevalence of whooping cough shows a most striking reduction. There were a total of 1,658 cases reported during 1919 as contrasted with 5,558 in 1918. Whether this was due to an actual diminution in the prevalence of whooping cough, such as was experienced in connection with measles in particular, during the period of the influenza and pneumonia epidemic, or whether the small number of cases reported was due to the

habitual failure on the part of practising physicians in this city, to report such cases to the Health Department, or on the part of parents to allow patients suffering from whooping cough, to remain unseen by private physicians, it is impossible to say, but the striking reduction is by no means an indication that whooping cough, like scarlet fever, is steadily receding in importance. We are well justified in believing that whooping cough will come to engage the attention of health officers throughout the world to a greater degree almost than any other of the commoner communicable disease. We may say this advisedly; for if the Schick test is applied with any degree of thoroughness in advanced communities in the next five or ten years, diphtheria will very fast dwindle into insignificance as a public health problem. One is justified in taking this very optimistic attitude with respect to diphtheria on the basis of the excellent account which the Schick test and active immunization have thus far given of themselves. If diphtheria through the Schick test does become less conspicuous whooping cough will gain proportionately in importance.

Whooping cough looms up large because in the great majority of cases, the parents do not call in a private physician, and one case of whooping cough developing in a family, is sure to be followed by a fairly large group of secondary cases. This disease is a grave menace during the summer time, in particular. We get a reflection of the deadly effects of this disease through the increasing number of deaths from whooping cough which have been noted during the last several years, and in particular, by the relatively large number of deaths from pneumonia occurring in children of earlier age groups. It is safe to say that a fairly large number of deaths from pneumonia in children of the earlier age groups, is directly or indirectly the result of pertussis infection.

Because of the long duration of whooping cough and especially because of the inability of physicians to identify the disease in its incipency, there has been a traditional laxity in the enforcement of isolation in cases of whooping cough. The laws with reference to isolation of whooping cough cases are a dead letter in practically every community. It would be infinitely wiser and might help us to save many lives if we frankly acknowledged the deficiencies of our present system and instead of pretending that we are enforcing the law, if we admitted our failure and set about to meet the problem in a more straightforward and constructive manner. In other words, the time has come when we ought to insist upon a campaign of education which will be unrelenting and thorough, in order to bring home to the great majority of people in the community a knowledge of the grave character of whooping cough as a menace to child life.

### *Typhoid Fever.*

The work in connection with the control and the prevention of typhoid fever, has been important in many particulars. We had always prided our-



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selves on our record, and we felt that we were justified in taking particular credit to ourselves in our achievements in the field of typhoid fever control, especially in view of the fact that we have for many years been accorded the palm for our typhoid fever control activities in the yearly review of the typhoid fever situation in America which it has become the fixed custom of the American Medical Association to make. The following quotation from the Journal of the American Medical Association of March 6, 1920, in which typhoid fever as occurring in the large cities of the United States during 1919 is reviewed, is particularly apropos:

"Chicago, New York, Boston, and Cleveland report typhoid rates that are astonishing low. As in previous years, the New York City Health Department has printed quarterly the result of its detailed study of each typhoid case. Increasing success seems to mark the work of the Department in tracing sources of infection for the last quarter of 1919. It was reported that the probable mode of infection was determined in 35.7% of the cases as against 30% in the corresponding quarter of 1918. Relatively, a large proportion of the cases was traced to out-of-town infection. The majority of cases traced to their source within the city were due to contact with active cases or chronic carriers. Water-borne and milk-borne typhoid infection seems to have almost disappeared from New York City."

We have retired into second place among the ten largest cities in so far as the control of typhoid fever is concerned, not because we have failed to make very considerable improvement in our methods and each year to better the results of the preceding year, but because we are extremely hard upon ourselves in including every case of typhoid fever reported to us, even though the diagnosis is not bacteriologically confirmed. It seems that in some cities, the only cases which are listed as typhoid fever are those in which the doctor can definitely demonstrate that this clinical diagnosis is confirmed by bacteriological evidence. The burden of proof is placed upon the doctor in other cities. We feel that this is a mistaken attitude, and even though it has caused us the loss of first place among the large cities of this country, in the control of typhoid fever, we feel that the more scientific and constructive attitude is to include those cases in which the private physician insists upon the diagnosis of typhoid fever, but in which he has been unable to obtain laboratory confirmation.

In 1919, we reached the remarkably low point of 2 deaths per 100,000 of population.

Our procedure in the supervision and control of typhoid fever cases and the methods for the prevention of typhoid, have been very greatly improved during the last year in a number of important details. This derives a special significance from the fact that typhoid fever still ranks ninth as a cause of death in this country. It ranks fifth among the infectious diseases, being exceeded only by tuberculosis, pneumonia, infantile diarrhoea, and diphtheria. While the disease causes death in only a little over 2% of the

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cases under five years of age, it results fatally in 35% of the cases in adults over forty-five years of age. Taking into account the financial loss entailed by loss of wages, the cost of nursing and medical care, and especially the economic loss represented by each fatal case, typhoid fever still retains a place of very considerable importance in the list of infectious diseases. However, in view of the fact that a relatively large number of all cases are caused by typhoid carriers in the community, of whom only a few under existing conditions can be discovered we have still reason to feel that we must maintain vigilance in order to exclude this disease from the community.

We had a total of 854 cases of typhoid fever in the City of New York during 1919, as contrasted with 1,238 during the preceding year. This is a remarkably small number of cases for the City of New York. Since the year of the consolidation of the Greater City, up to and including 1915, the number of cases of typhoid fever reported each year ranged between 2,200 and 4,400 with the exception of 1899 when we had the lowest number of cases, namely, 1,950; the actual number of cases is here stated, and we exclude for the time being the ratio of cases per thousand of population.

There were 121 deaths in the City of New York from this cause during 1919 as compared with 196 during 1918.

The one striking and conspicuous improvement now needed is in the formulation of rules and regulations to be adopted by the Board of Health for the control of typhoid carriers. During 1919, we had under our observation a total of 67 typhoid carriers. While several had formerly been engaged as food handlers, none were so employed since first they were identified as carriers. A few now prepare food for their own families. With few exceptions, the members of families of typhoid carriers have been immunized. With the exception of four of these individuals, the home conditions and the personal habits in all cases were excellent. They had been carefully instructed how to protect others, and they carefully observe these instructions. The four cases who were refractory, required special care in order to make them comply with our requirements. Of the 67, 50 were female and 17 male. Of these group of carriers, 4 deny ever having had typhoid fever; 7 are inmates of insane asylums, and particular vigilance is required to prevent infection of others in those institutions in which they are kept.

"Typhoid Mary" is still detained at Riverside Hospital, as is also one other chronic carrier who has been the cause of several small outbreaks, and whom we deem it best in the interest of others to be kept at Riverside Hospital.

During the year, 3 of our carriers absconded and we have been unable to trace them.

Our rules and regulations governing the control of these carriers, if strengthened along lines which have been suggested during the year, will add very measurably to the safety of the community. The very fact that

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we have a group of carriers in the community, some of whom are known and many more of whom have very likely escaped detection up to the present time, makes it essential that typhoid immunization be accepted by all persons who are compelled to eat in public restaurants or dining rooms, notwithstanding the fact that we have inaugurated a system of foodhandler examination.

Unfortunately with the facilities at our disposal, we have not been able to do more than merely scrape the surface in the examination of approximately three-quarter million of foodhandlers in this city. Furthermore, every person who travels for business or pleasure, as well as those living in institutions where large numbers of persons are congregated, should by all means be persuaded and urged to accept typhoid immunization.

In Table 5, an analysis has been presented of all typhoid fever cases and of all deaths from this cause, classification being made by sex and by age group. It shows quite definitely that only 2% occurred in children under five years of age. There is a gradual ascent in the case fatality rate as we reach the higher age groups, the maximum being found in the age group from 20-24 years. Thereafter, there is a gradual decline.

During the year, we had to deal with several small outbreaks, the largest of which occurred in the Yorkville district, where 39 cases were reported in a period extending from early in October to the middle of November. This outbreak was concentrated in a rather narrow area and in spite of the fact that more than twenty nurses were assigned to make a most intensive house to house investigation in the district, and in spite of the most painstaking attempts to ascertain if possible whether the milk supply, foodstuffs or any other of the commonly accepted factors were responsible for the outbreak, we were baffled. We came to the conclusion, however, that the defective condition of plumbing in two buildings where a considerable number of cases had occurred, was responsible for allowing the excreta of infected individuals to escape into the yards of these buildings in large quantity over a long period of time, furnishing material upon which flies without numbers were observed to feed. Our observations led us to feel rather strongly that the presence of innumerable flies feeding upon this contaminated human excreta, coming in particular from persons whom we knew to be affected, was very likely responsible for the spread of the outbreak.

Other outbreaks which occurred during the year were, comparatively speaking, insignificant and do not deserve special mention.

During the year, 32 cases of typhoid fever gave a very definite history of eating oysters and clams obtained from various sources. In no instance, was it possible to demonstrate definitely that shellfish were responsible for the attack of the disease. In a number of instances, the eating of shellfish was indulged in out-of-town, and these sources could not be traced. In still other instances, samples of shellfish were obtained as early as possible from the same source and examined for typhoid bacilli or *B. coli*.

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TABLE 5.  
TYPHOID FEVER, 1919.  
CASES AND DEATHS.

	Under 5 years.				5 to 9 years.				10 to 14 years.				15 to 19 years.				20 to 24 years.				25 to 29 years.				30 to 34 years.			
	Cases.		Deaths.		Cases.		Deaths.		Cases.		Deaths.		Cases.		Deaths.		Cases.		Deaths.		Cases.		Deaths.		Cases.		Deaths.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Manhattan.....	9	9	0	2	30	32	2	3	43	28	1	3	27	32	1	4	22	24	3	3	29	17	6	1	17	19	5	2
Brooklyn.....	2	4	0	0	9	8	0	1	14	3	0	1	8	8	1	3	7	6	0	2	6	5	1	1	7	3	0	0
Queens.....	5	3	0	0	17	17	2	0	28	17	3	0	21	16	4	5	15	12	5	5	13	18	0	5	19	12	5	1
Richmond.....	1	1	0	0	10	1	0	0	6	4	1	1	9	4	0	0	4	1	3	1	1	2	0	0	1	5	2	0
New York City....	18	17	0	2	67	59	4	4	92	53	5	5	66	62	6	12	50	44	13	8	50	42	8	7	47	39	13	3
Total by age groups	35	2			126			8	145		10		128		18		94		21		92		15		86		16	
Per cent. by age groups of total...	4	2			15			7	17		8		15		15		11		17		11		12		10		13	
Per cent. case fatality by age groups	5.7				6.3				7				14				22.3				16.3				18.6			
Per cent. of total by sex.....	51	49	0	100	53	47	50	50	64	36	50	50	52	48	33	66	53	47	62	38	54	46	53	47	55	45	81	19

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TABLE 5—Continued.

	35 to 39 years.				40 to 44 years.				45 and Over.				Total.				Total both Male and Female.		Per cent. Cases and Deaths.		Rate per 100,000 Population.	
	Cases.		Deaths.		Cases.		Deaths.		Cases.		Deaths.		Cases.		Deaths.		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.						
Manhattan.....	12	12	3	1	11	7	3	1	12	15	3	4	212	195	27	24	497	51	49	40	14.6	1.8
Bronx.....	2	3	0	0	4	0	1	0	1	2	0	0	60	42	3	8	102	11	12	9	15.8	1.7
Brooklyn.....	13	4	2	1	5	5	1	1	11	8	5	2	147	112	27	16	259	43	30	36	12.5	2.1
Queens.....	3	1	0	0	1	2	2	1	6	2	0	0	42	23	7	3	65	10	8	9	16	2.4
Richmond.....	1	1	0	0	1	0	0	0	1	2	0	1	13	8	5	1	21	6	3	6	20	6
New York City....	31	21	5	1	22	14	7	3	31	29	8	7	474	380	69	52	854	121	100	100	14.2	2
Total by age groups	52	6	6	10	36	4	8	15	60	7	12	15	854	100	121	100						
Per cent. by age groups of total....	6	5							7				100		100							
Per cent. case fatality by age groups	11.5		27.7		25		14.2		14.2		1											
Per cent. of total by sex.....	60	40	84	16	60	40	70	30	52	48	53	47	55	45								



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### *Epidemic cerebro-spinal meningitis.*

The prevalence of epidemic cerebro-spinal meningitis was well within normal limits. During the year, there was reported a total of 317 cases of epidemic cerebro-spinal meningitis. Of this number, 171 terminated fatally. In 53% of the total number of cases reported, the diagnosis was confirmed by the examination of the cerebro-spinal fluid.

Of the total number of cases reported, 168 were under five years of age. In other words, 49% of the cases fatalities occurred at this age. Sixty-seven per cent of the cases occurred in males; on the other hand, 62% of all the deaths occurred among females. It will be seen in Table 6 that in the age group under five years, 50% of all ages terminated fatally, as compared with 32% in the age group from 5 to 9; 47% in the age group from 10 to 14; 65% in the age group from 15 to 19; 47% in the age group from 20-24; 85% in the age group from 25 to 29; and 75% in the age group from 30-34. Of the cases occurring in the age group from 35 to 39, and 40 to 44 all terminated fatally.

### *Poliomyelitis.*

The prevalence of poliomyelitis was also very much less than during the preceding years. A total of 44 cases and 14 deaths was reported during the year. Of the total number reported, 57% of the cases and 64% of all deaths occurred in children under five years of age. From 5 to 14 years inclusive, there were 14 cases without any death.

Altogether the situation with reference to this disease during the year 1919 was most favorable.

Table 7 attached shows the result of a study of poliomyelitis by age group and sex.

TABLE 6.  
EPIDEMIC CEREBRO-SPINAL MENINGITIS.  
BY AGE GROUPS AND SEX.

	Under 5 years.				5 to 9 years.				10 to 14 years.				15 to 19 years.				20 to 24 years.				25 to 29 years.				30 to 34 years.			
	Cases.		Deaths.		Cases.		Deaths.		Cases.		Deaths.		Cases.		Deaths.		Cases.		Deaths.		Cases.		Deaths.		Cases.		Deaths.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Manhattan.....	48	27	21	15	5	7	3	1	5	5	2	2	5	4	6	1	8	3	4	0	6	2	6	2	5	0	5	0
Bronx.....	15	5	1	1	2	1	0	0	1	1	0	0	1	0	0	0	0	4	2	2	1	0	0	0	0	0	0	0
Brooklyn.....	14	14	23	14	11	4	0	4	2	4	2	3	2	4	2	2	2	2	1	0	2	0	2	1	8	3	3	4
Queens.....	7	5	3	3	3	2	3	1	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Richmond.....	1	1	1	0	2	1	0	0	1	1	0	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New York City....	116	52	51	33	23	15	6	6	9	10	3	6	13	7	10	3	10	9	6	3	10	3	8	3	13	3	8	4
Total by age groups	168	84			38	12			19	9			20	13			19	9			13	11			16		12	
Total by age groups (percentage)....	53	49			12	7			6	5			6	8			6	5			4	6			6		5	
By sex (percentage)	70	30	61	39	60	40	50	50	53	47	33	67	70	30	77	23	47	53	67	33	77	23	73	27	81	19	67	33
Case fatality (percentage).....			50				32				47				65				47				85				75	

BUREAU OF PREVENTABLE DISEASES

TABLE 6—Continued.

	35 to 39 years.						40 to 44 years.						45 and over.						Total.				Total both Sexes.		Percentage by Boroughs.		Cases Verified by Lumbar punct.	
	Cases.			Deaths.			Cases.			Deaths.			Cases.			Deaths.			Cases.		Deaths.		Cases.	Deaths.	Male.	Female.	%	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.								
Manhattan.....	5	0	5	0	1	1	4	2	3	4	92	50	56	26	142	82	45	47	57	40								
Bronx.....	0	0	0	0	0	0	1	0	1	0	22	12	2	3	34	5	11	3	12	32								
Brooklyn.....	0	1	0	1	1	0	5	3	3	1	80	31	38	30	111	68	35	41	79	71								
Queens.....	0	0	0	0	0	0	0	0	0	0	11	8	9	5	19	14	6	8	11	58								
Richmond.....	0	0	0	0	0	0	1	0	0	0	7	4	1	1	11	2	3	1	10	91								
New York City.....	5	1	5	1	2	1	11	5	7	5	212	105	106	65	317	171	100	100	169	53								
Total by age groups	6			3			16			12			317			171												
Total by age groups (percentage).....	1			2			5			7																		
By sex (percentage)	100	0	84	16	100	0	67	33	69	31	58	42	67	33	62	38												
Case fatality (percentage).....	100						100			75			54															

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TABLE 7-8.  
POLIOMYELITIS—1919.

	Under 5 years.				5 to 9 years.				10 to 14 years.				15 to 19 years.				20 to 24 years.				25 to 29 years.				30 to 34 years.			
	Cases.		Deaths.		Cases.		Deaths.		Cases.		Deaths.		Cases.		Deaths.		Cases.		Deaths.		Cases.		Deaths.		Cases.		Deaths.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Manhattan.....	4	5	1	2	2	2	0	0	1	0	0	0	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0
Bronx.....	0	2	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brooklyn.....	8	3	4	2	0	1	0	0	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Queens.....	2	1	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Richmond.....	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New York City....	14	11	5	4	6	3	0	0	3	2	0	0	1	2	1	1	1	1	1	1	0	1	0	1	0	0	0	0
Total by age groups	25	9			9	9	0	0	5	0			3	2			2	2			1	1			0	0		
Percentage by age groups.....	57	64			21	21	0	0	11	0			7	14			2	14			2	7			0	0		
Percentage by sex..	56	44	56	44	67	33	0	0	60	40	0	0	67	33	50	50	100	0	50	50	0	100	0	100	0	0	0	0
Case fatality (percentage).....		36				0				0				67				100				100						

BUREAU OF PREVENTABLE DISEASES

TABLE 7-8—Continued.

	35 to 39 years.						40 to 44 years.						45 and Over.						Total.				Total both Sexes.		Percentage by Boroughs.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
	Cases.			Deaths.			Cases.			Deaths.			Cases.			Deaths.			Cases.		Deaths.		Cases.	Deaths.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Manhattan.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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TABLE 9.  
MEASLES—DEATHS DURING 1919.

	Manh.		Bronx		Bklyn.		Queens		Richd.		City		Percentage	
Total.....	143		9		51		8		7		218			
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Total Sexes.....	67	76	5	4	30	21	6	2	3	4	111	107	51	50
Under 1.....	18	23	3	0	9	6	1	0	1	2	32	31	15	15
1—2.....	32	36	2	3	11	12	4	1	0	2	49	54	22.5	2.5
2—3.....	10	12	0	0	3	1	0	1	1	0	14	14	6.4	6.4
3—4.....	6	2	0	0	1	1	1	0	0	0	8	3	3.7	1.4
4—5.....	0	2	0	0	2	0	0	0	1	0	3	2	1.4	1
Total under 5.....	66	75	5	3	26	20	6	2	3	4	106	104	48.1	47.7
5—9.....	1	0	0	0	1	0	0	0	0	0	2	0	0	0
10—14.....	0	0	0	1	0	0	0	0	0	0	0	1	1	0
15—19.....	0	0	0	0	1	1	0	0	0	0	1	1	1	1
20—24.....	0	1	0	0	2	0	0	0	0	0	2	1	2	1
25—29.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0

*Measles.*

The incidence of measles during 1919 was extraordinarily light. A total of 8,194 cases was reported during the year. This was less than one-quarter the number of cases that we have had reported during a considerable number of the preceding years. The reduction was so striking as to constitute a unique phenomenon in our experience. The absence of any great epidemic of this disease in any of the years immediately preceding, would indicate that there were quite as many individuals in our community who were susceptible to measles during 1919 as during other years.

Since, apparently, it was not the lack of susceptible material, the question arises whether the organism responsible for the influenza and pneumonia epidemic was in any way either associated with or related to the causative agent of measles. While it is possible that private physicians failed to report a large number of the cases during the year because of the tremendous volume of work during the influenza and pneumonia epidemic, and this may account alone for the unusual low incidence of measles, our occasional house to house investigations during the year lead us to believe that this was not the case. Moreover, the number of deaths reported from this disease, 218, was so very much lower than the number reported during any of the preceding years, that we feel confident that the mortality rate from this disease furnishes us with a fairly reliable index, showing that

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the disease was in reality reduced to almost negligible proportions during the year.

Out of a total of 8,194 cases reported during the year, the age was given by the physician reporting the cases in 6,767 persons. While the officers of this Bureau invariably make inquiry of the physician reporting the case when he fails to give the age of the patient, and although this was done in connection with all cases reported during the year, a study was limited to those cases in which the age was given in the first instance. (See attached table.)

Table 8 is a classification by age groups of the cases occurring in the various boroughs in which the age was reported. It is interesting to note that the higher percentage of cases reported in any age period was in children 6 years of age, namely, 16%; the next highest in children 7 years of age, as well as those 2 years of age, namely, 13% respectively.

The inference would seem to be warranted that while measles to a very considerable degree is a disease affecting children of pre-school age, that by and large, it finds its largest number of victims among school children.

A study was made of the age groups of the 218 deaths from measles reported during the year, and is given in the attached table 9.

A tendency toward a reduction in the mortality rate from measles which has been apparent for many years, is well indicated in Table 10 showing the number of cases of measles, death rates, and the population of the city. Up to the year of consolidation, the City of New York comprised the Boroughs of Manhattan and The Bronx, and the figures indicated in the attached table from 1866 to 1898 are for the city as constituted at that time; from 1898, the figures relate to the Greater City comprising the five boroughs.

In Table 11 is given the age group, sex, and color of all cases of death from measles which occurred from 1866 to 1919. This table is extremely interesting, and while the age group classification varied from time to time, the figures as given here are essentially correct and indicate very strikingly the tremendous case fatality rate from measles in children under five years.

In 1918, 93% of the total deaths from measles occurred in children under five years of age. The brunt of the attack and the bulk of the fatalities occurred in children between the ages of 1 and 2 years.

### *Encephalitis lethargica.*

Particular attention was given during the year to the occurrence in this community of cases of encephalitis lethargica. Reports of such cases began to filter into the Department of Health in October, 1918. The greatest incidence of this disease seemed to occur as an aftermath to the successive visitations of influenza and pneumonia.

There were 167 cases of encephalitis lethargica reported to the Health

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Department during 1919. The disease was not a reportable one nor did it seem necessary at the outset to make it reportable, especially because it is in the nature of an unusual occurrence. No doubt the number of reported cases, namely 167, represents a relatively small percentage of the total number of cases which occurred in the City of New York during the year. The disease seemed to attack all age groups, but was apparently more prevalent in children from 5 to 9 years of age, and became increasingly frequent, attaining the maximum prevalence in those between 20 to 35 years of age. Of the 167 cases reported, 43 terminated fatally.

In view of its importance, special measures were advised and recommended during the year to secure as complete statistical data as possible with reference to the prevalence and the clinical manifestations of this disease.

TABLE 10.  
MEASLES—CASES REPORTED AND DEATH RATES.  
(Former New York City.)

Year	Cases	Death Rates	Population	Year	Cases	Death Rates	Population
1866	.....	...	.....	1893	7,122	.19	2,643,211
1867	.....	...	.....	1894	9,493	.28	2,774,511
1868	.....	.19	1,205,588	1895	8,203	.34	2,868,585
1869	.....	.62	1,271,622	1896	11,850	.36	2,938,950
1870	.....	.27	1,340,704	1897	9,118	.19	3,005,985
1871	.....	.35	1,369,320	1898	15,056	.19	3,272,418
1872	.....	.37	1,398,748	1899	12,530	.17	3,356,722
1873	.....	.26	1,429,018	1900	19,299	.23	3,446,042
1874	1,407	.27	1,495,959	1901	11,990	.12	3,554,079
1875	703	.11	1,528,184	1902	20,252	.19	3,665,825
1876	1,638	.33	1,575,132	1903	13,689	.13	3,781,423
1877	1,719	.11	1,623,524	1904	32,861	.22	3,901,023
1878	2,172	.22	1,673,406	1905	19,026	.12	4,025,742
1879	2,333	.22	1,724,823	1906	38,653	.27	4,166,556
1880	3,891	.36	1,777,351	1907	16,637	.16	4,314,237
1881	3,076	.27	1,830,876	1908	38,276	.21	4,469,248
1882	4,637	.57	1,886,017	1909	31,950	.21	4,632,078
1883	3,828	.40	1,942,820	1910	35,374	.16	4,794,935
1884	4,395	.44	2,001,338	1911	35,540	.13	4,929,586
1885	4,095	.44	2,061,622	1912	39,018	.13	5,064,237
1886	5,028	.36	2,132,818	1913	29,163	.12	5,198,888
1887	6,062	.42	2,211,272	1914	25,793	.15	5,333,539
1888	7,279	.29	2,279,068	1915	38,186	.11	5,468,190
1889	6,443	.29	2,349,006	1916	21,603	.08	5,602,841
1890	9,544	.38	2,420,817	1917	27,419	.08	5,737,492
1891	11,980	.35	2,492,787	1918	28,675	.13	5,872,143
1892	12,780	.40	2,566,896	1919	8,194	.04	6,006,784

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TABLE 11.  
MEASLES.  
DEATHS BY AGE GROUPS, YEARS, AND SEX, 1866 TO 1919.  
(New York City).

Ye.	Total All Ages.	Total.		Under 1.		1 to 2.		2 to 5.		Total Under 5.		5 to 15.		15 to 25.		25 to 45.		45 to 65.		65 and and Over.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1866	153	93	60	15	13	45	21	24	20	84	54	9	5	..	..	..	..	..	..	..	..
1867	499	272	227	60	42	113	97	70	75	249	214	22	12	1	1	..	..	..	..	..	..
1868	200	98	102	38	27	31	35	23	30	92	92	6	8	..	..	..	..	..	..	..	..
1869	536	271	255	74	62	102	95	83	74	259	231	11	20	1	..	..	..	..	..	..	..
1870	298	165	133	42	22	57	51	54	49	153	122	11	10	..	..	..	..	..	..	..	..
1871	409	213	196	60	42	78	76	61	67	199	185	14	8	..	..	..	..	..	..	..	..
1872	463	244	219	68	61	84	72	79	69	231	202	12	15	1	..	..	..	..	..	..	..
1873	306	141	165	40	50	46	59	43	46	129	155	10	7	1	..	..	..	..	..	..	..
1874	319	167	152	49	46	60	49	45	40	154	135	11	12	1	..	..	..	..	..	..	..
1875	167	76	91	12	22	31	35	25	26	68	83	8	8	..	..	..	..	..	..	..	..
1876	362	194	168	44	40	68	61	59	55	171	156	22	9	..	..	..	..	..	..	..	..
1877	155	87	68	34	14	27	25	20	20	81	59	6	8	..	..	..	..	..	..	..	..
1878	272	134	138	39	42	45	38	41	44	125	124	8	11	..	..	..	..	..	..	..	..
1879	244	130	114	33	16	48	47	36	38	117	101	12	12	..	..	..	..	..	..	..	..
1880	479	256	223	82	53	86	81	75	71	243	205	13	17	..	..	..	..	..	..	..	..
1881	429	210	219	52	62	71	73	70	67	193	202	16	14	..	..	..	..	..	..	..	..
1882	916	443	470	113	131	149	150	145	147	407	428	33	33	..	..	..	..	..	..	..	..
1883	713	371	345	109	83	131	136	91	90	331	309	33	28	..	..	..	..	..	..	..	..
1884	762	415	347	108	105	163	129	99	99	390	324	23	19	..	..	..	..	..	..	..	..
1885	736	375	361	103	107	145	140	99	86	347	333	26	24	..	..	..	..	..	..	..	..
1886	668	346	322	93	77	156	127	76	95	325	299	16	22	..	..	..	..	..	..	..	..
1887	767	387	389	119	110	138	140	109	101	366	351	16	22	..	..	..	..	..	..	..	..
1888	591	325	266	100	87	116	103	87	63	303	253	19	8	..	..	..	..	..	..	..	..
1889	470	234	236	66	55	95	89	51	76	212	220	18	14	..	..	..	..	..	..	..	..
1890	730	385	345	121	99	139	141	105	87	365	227	16	16	..	..	..	..	..	..	..	..
1891	663	316	347	82	94	116	138	95	102	293	334	18	12	..	..	..	..	..	..	..	..
1892	864	451	413	151	111	166	150	113	122	430	383	18	27	..	..	..	..	..	..	..	..
1893	393	202	191	57	54	85	67	47	59	189	180	9	11	..	..	..	..	..	..	..	..
1894	584	298	286	90	88	108	94	73	85	277	267	20	15	..	..	..	..	..	..	..	..
1895	793	374	419	84	108	167	157	105	132	356	297	15	20	..	..	..	..	..	..	..	..
1896	714	355	359	99	88	119	133	118	116	336	337	16	16	..	..	..	..	..	..	..	..
1897	391	192	199	53	55	80	79	52	50	185	184	6	12	..	..	..	..	..	..	..	..
1898	446	252	194	76	48	112	88	58	49	246	185	6	5	..	..	..	..	..	..	..	..

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TABLE 11.—Continued.

Year.	Total All Ages.	Total.		Under 1.		1 to 2.		2 to 3.		3 to 4.		4 to 5.		Total Under 5.		5-9.		10-14.		15-19.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1899.....	587	303	284	81	58	133	126	40	44	18	24	12	16	284	268	17	14	1	..	..	1
1900.....	816	410	406	110	98	170	163	66	58	25	35	13	18	384	362	20	33	..	4	..	..
1901.....	449	248	201	59	39	98	77	43	42	16	18	13	10	229	186	16	12	1	1	1	..
1902.....	710	375	335	117	87	140	125	52	58	26	20	19	19	354	309	17	17	..	1	..	..
1903.....	508	270	278	69	34	96	55	37	22	15	12	8	4	216	127	22	6	..	..	..	..
1904.....	895	449	446	120	99	167	195	69	79	38	26	19	20	413	419	28	18	..	2	..	2
1905.....	520	273	247	94	72	109	88	29	34	16	23	7	9	255	226	15	15	..	3	..	..
1906.....	1,145	566	579	162	153	209	221	97	102	45	50	19	23	532	549	25	24	..	2	..	2
1907.....	728	394	334	121	88	141	131	54	51	31	31	10	12	357	313	16	24	..	3	..	1
1908.....	972	515	459	149	126	219	178	86	71	24	31	11	22	489	428	20	25	..	1	..	1
1909.....	997	504	493	138	136	214	201	85	72	28	39	12	19	477	467	21	21	..	1	..	2
1910.....	785	435	350	114	78	194	139	64	59	27	27	9	20	408	323	20	19	..	1	..	1
1911.....	659	354	305	80	85	153	120	55	47	24	25	17	8	329	285	20	16	..	1	..	1
1912.....	671	361	310	112	90	137	130	55	48	25	12	13	9	342	289	15	18	..	..	..	..
1913.....	628	327	301	90	70	134	138	45	49	28	22	13	7	310	286	14	10	..	..	..	..
1914.....	560	307	253	85	53	145	136	33	32	18	16	8	8	289	245	15	6	..	..	..	..
1915.....	630	343	287	86	68	169	133	53	41	18	18	9	5	326	265	13	17	..	2	..	1
1916.....	490	259	231	77	71	110	110	35	33	18	7	6	3	246	224	11	6	..	..	..	..
1917.....	560	292	268	78	70	131	124	45	38	13	15	8	9	275	356	11	7	..	2	..	..
1918.....	790	413	377	98	93	182	171	59	48	25	33	13	12	377	357	24	15	..	1	..	..
1919.....	218	111	107	32	31	49	54	14	14	8	3	3	2	106	104	2	..	..	1	..	1



## BUREAU OF PREVENTABLE DISEASES

TABLE 11—Continued.

Year.	20-24.		25-29.		30-34.		35-39.		40-44.		45-49.		50-54.		55-59.		60-64.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1899.....	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1900.....	1	..	1	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..
1901.....	1	..	1	1	..	..	1	1	..	..	..	..	..	..	..	..	..	..
1902.....	1	2	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
1903.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1904.....	1	1	2	1	..	1	1	1	1	1	..	..	..	..	..	..	..	..
1905.....	..	3	..	2	..	1	..	..	..	..	..	..	..	..	..	..	..	..
1906.....	1	1	1	2	1	..	..	..	..	1	..	..	..	..	..	..	..	..
1907.....	2	1	2	1	4	..	..	..	2	..	1	..	..	..	..	..	..	..
1908.....	2	2	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1909.....	2	1	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1910.....	..	2	..	1	1	1	..	..	..	..	..	..	..	1	..	..	..	..
1911.....	1	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1912.....	2	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1913.....	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1914.....	1	1	..	1	..	..	1	1	1	..	..	..	..	..	..	..	..	..
1915.....	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1916.....	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1917.....	4	..	1	1	..	..	2	2	1	1	1	..	..	..	..	1	..	..
1918.....	3	1	2	2	..	1	..	..	..	..	..	..	..	..	..	..	..	..
1919.....	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

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TABLE 11—Continued.

Year.	65-69.		70-74.		75-79.		80-84.		85 and plus.		Colored.		Chinese.		Japanese.		Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
1899.....	..	..	..	..	..	..	..	..	..	..	9	4	..	..	..	..	...
1900.....	..	..	..	..	1	..	..	..	..	..	5	10	..	..	..	..	...
1901.....	..	..	..	..	..	..	..	..	..	..	5	3	..	..	..	..	...
1902.....	..	..	..	..	..	..	..	..	..	..	3	6	..	..	..	..	...
1903.....	..	..	..	..	..	..	..	..	..	..	2	3	..	..	..	..	...
1904.....	..	..	..	..	..	..	..	..	..	..	8	7	..	..	..	..	...
1905.....	..	..	..	..	..	..	..	..	..	..	..	5	..	..	..	..	...
1906.....	..	..	..	..	..	..	..	..	..	..	7	8	..	..	..	..	...
1907.....	..	..	..	..	..	..	..	..	..	..	2	6	..	..	..	..	...
1908.....	..	..	..	..	..	..	..	..	..	..	9	9	..	..	..	..	...
1909.....	..	..	..	..	..	..	..	..	..	..	5	4	..	..	..	..	...
1910.....	..	..	..	..	..	..	..	..	..	..	8	6	..	..	..	..	...
1911.....	..	..	..	..	..	..	..	..	..	..	4	3	..	..	..	..	...
1912.....	..	..	..	..	..	..	..	..	..	..	6	8	..	..	..	..	...
1913.....	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	...
1914.....	..	..	..	..	1	..	..	..	..	..	6	5	..	..	..	..	...
1915.....	..	..	..	..	..	..	..	..	..	..	2	5	..	..	..	..	...
1916.....	..	..	..	..	..	..	..	..	..	..	2	5	..	..	..	..	...
1917.....	..	..	..	..	..	..	..	..	..	..	4	6	..	..	..	..	...
1918.....	..	..	..	..	..	..	..	..	..	..	9	5	..	..	..	..	...
1919.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...

## BUREAU OF PREVENTABLE DISEASES

TABLE 12.

GENERAL INCIDENCE OF PREVENTABLE DISEASE IN NEW YORK CITY, 1919.

	Cases Reported.		Cases per 1,000 of Population.		Deaths.		Deaths per 1,000 of Population.		Case Fatality, Per Cent.	
	1918.	1919.	1918.	1919.	1918.	1919.	1918.	1919.	1918.	1919.
Diphtheria:										
Manhattan.....	5,164	5,898	1.89	2.12	598	520	.22	.19	11.58	8.82
Bronx.....	1,873	2,253	3.01	3.49	139	173	.22	.27	7.42	7.68
Brooklyn.....	3,386	4,389	1.67	2.12	395	423	.19	.20	11.67	9.64
Queens.....	811	1,158	2.06	2.85	94	99	.24	.24	11.59	8.55
Richmond.....	221	316	2.17	3.05	18	24	.18	.23	8.15	7.59
City.....	11,455	14,014	1.95	2.33	1,244	1,239	.21	.21	10.86	8.84
Scarlet Fever:										
Manhattan.....	1,782	1,687	.65	.61	93	59	.03	.02	5.22	3.50
Bronx.....	863	715	1.39	1.11	10	22	.02	.03	1.16	3.08
Brooklyn.....	1,332	1,636	.66	.79	57	43	.03	.02	4.28	2.63
Queens.....	395	445	1.01	1.10	16	12	.04	.03	4.05	2.70
Richmond.....	88	111	.86	1.07	1	....	.01	....	1.14	....
City.....	4,460	4,594	.76	.76	177	136	.03	.02	3.97	2.96
Measles:										
Manhattan.....	9,869	4,531	3.61	1.63	370	143	.14	.05	3.75	3.16
Bronx.....	3,940	1,388	6.33	2.15	57	9	.09	.01	1.45	.65
Brooklyn.....	11,559	1,295	5.71	.62	310	51	.15	.02	2.68	3.93
Queens.....	2,582	519	6.57	1.28	44	8	.11	.02	1.70	1.54
Richmond.....	725	461	7.13	4.45	9	7	.09	.07	1.24	1.52
City.....	28,675	8,194	4.88	1.36	790	218	.13	.04	2.75	2.66
Whooping Cough:										
Manhattan.....	1,920	575	.70	.21	328	60	.12	.02	17.1	10.4
Bronx.....	978	207	1.57	.32	73	17	.12	.03	5.8	8.21
Brooklyn.....	1,792	681	.86	.33	163	58	.08	.03	9.1	8.5
Queens.....	593	131	1.51	.32	83	14	.21	.03	14.0	10.7
Richmond.....	275	64	2.70	.62	17	3	.17	.03	6.2	4.7
City.....	5,558	1,658	.95	.28	664	161	.13	.03	11.9	9.7
Pulmonary Tuberculosis:										
Manhattan.....	7,885	7,713	2.89	2.77	4,321	3,597	1.58	1.29	54.8	46.6
Bronx.....	1,501	1,760	2.41	2.72	967	920	1.55	1.42	64.4	52.3
Brooklyn.....	4,228	4,363	2.09	2.11	2,677	2,252	1.32	1.09	63.3	51.6
Queens.....	680	542	1.73	1.33	626	474	1.59	1.17	92.1	87.4
Richmond.....	145	192	1.43	1.85	188	152	1.85	1.47	129.6	79.2
City.....	14,439	14,570	2.46	2.43	8,779	7,395	1.50	1.23	60.8	50.7
Typhoid Fever:										
Manhattan.....	554	407	.20	.15	84	51	.04	.02	15.2	12.5
Bronx.....	141	102	.23	.16	16	11	.03	.02	11.4	10.8
Brooklyn.....	453	259	.22	.12	81	43	.04	.02	17.9	16.6
Queens.....	75	65	.19	.16	9	10	.02	.02	12.0	15.4
Richmond.....	15	21	.15	.20	6	6	.06	.06	40.0	28.6
City.....	1,238	854	.21	.14	196	121	.03	.02	15.8	14.2
Cerebro-Spinal Meningitis:										
Manhattan.....	234	142	.09	.05	145	82	.05	.03	57.7	57.7
Bronx.....	22	34	.03	.05	6	5	.01	.01	27.3	14.7
Brooklyn.....	164	111	.08	.05	92	68	.04	.03	56.1	61.3
Queens.....	31	19	.07	.05	12	14	.03	.03	38.7	73.7
Richmond.....	26	11	.26	.11	7	2	.07	.02	26.9	18.2
City.....	477	317	.08	.05	262	171	.04	.03	54.9	53.9
Polio-myelitis:										
Manhattan.....	59	18	.02	.006	12	7	.004	.002	20.3	38.9
Bronx.....	19	5	.03	.008	3	....	.005	....	15.8	....
Brooklyn.....	48	14	.02	.007	11	7	.005	.003	22.9	50.0
Queens.....	8	6	.02	.001	3	1	.007	.002	37.5	16.0
Richmond.....	....	1	....	.01	....	....	....	....	....	....
City.....	134	42	.02	.007	29	15	.005	.002	21.6	35.7

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### *Major and Unusual Infectious Diseases.*

#### *Smallpox.*

Of the 18 cases listed, 11 arrived in the City from south, west or north during their incubation period. Seven, undoubtedly, were subjected to infection within the city limits. Of these 7, 3 had known exposures to preceding cases. No exposure could be traced to account for the remaining four. They presumably, came in contact with mild and unrecognized cases about their various places of business, along the water front, or in railroad freight yards.

The cases were all mild; no complications; no fatalities.

Two of the patients had last known exposures on the nineteenth and twenty-first days respectively, before the onset of symptoms. All the patients were adults; none had been vaccinated successfully within five years. Two had never been vaccinated. One, the patient with twenty-one days' incubation, was vaccinated unsuccessfully at time of exposure, illustrating apparently susceptibility to smallpox and unsusceptibility to vaccine.

Seven hundred and ninety-four possible contacts were vaccinated.

#### *Anthrax.*

Fourteen cases of anthrax were listed, all adults; thirteen male and one female. Six died, all face lesions; four with face lesions recovered. It is noteworthy that previous to 1917, practically all patients with face lesions died. Since the beginning of 1917, serum has been used more generally and about 50% of the face and neck cases have recovered.

In 1917, 7 out of 15 face lesion cases recovered.

In 1918, 10 out of 15 face lesion cases recovered.

In 1919, 4 out of 10 face lesion cases recovered.

Patients with lesions on extremities usually recover irrespective of treatment.

#### *Rabies.*

Five cases of rabies listed and 5 deaths. Patients were all children under 8 years of age. Two received antirabic treatment, begun within a day or two of time of bite. Both were face bites, and the shortness of the incubation—less than a month in both cases—precluded the possibility of effective treatment. Three of these cases were first reported by death certificate. The histories obtainable were incomplete. Five cases are an unpleasantly large number, the largest for several years.

#### *Tetanus.*

Twenty-one cases were listed with 9 deaths. Nine of these cases occurred in Brooklyn; 6 in Queens, and 6 in Manhattan. The use of serum is now general in connection with tetanus and is frequently effective even

BUREAU OF PREVENTABLE DISEASES

TABLE 17.  
COURT EXAMINATIONS FOR VENEREAL DISEASE, 1915.

	Total Examinations.	Males.	Females.	Total Males with Positive Wassermann.	Total Females with Positive Wassermann.	Number with Clinical Syphilis.	Total Number of Syphilis.	Number of Positive Smears.	Number with Positive Gonorrhoea Fix Test.	Number with Positive Gon. and Smear Fix Test.	Total Positive (by Laboratory) Gonorrhoea.	Clinical Gonorrhoea.	Number of Clinical Gon. with Positive Smears.	Number of Clinical Gon. with Gon. Fix Test.	Number with both.	Number with Neither.	Total Number of Gonorrhoea.	Total with Chancroids.	Total Number with Gon. and Syphilis.	Total Number with Venereal Diseases.
Jefferson Court, Male.....	24	24	...	5	...	33	5	167	83	19	231	89	15	4	12	58	289	4	109	5
Jefferson Court, Female.....	1,931	1,931	...	3	561	33	569	167	83	19	231	89	15	4	12	58	289	4	109	857
Fourth District Prison.....	10	10	...	6	...	...	3	1	...	...	1	...	...	...	...	...	1	...	...	4
Seventh District Prison.....	23	23	...	9	...	...	6	1	...	...	1	...	...	...	...	...	1	...	...	7
Third District Prison.....	1	1	...	1	...	...	1	1	...	...	2	...	...	...	...	...	...	...	...	1
District Attorney.....	3	1	2	1	1	...	2	1	2	1	2	...	...	...	...	...	2	...	...	4
Fourth District Prison, Queens.....	7	...	7	...	1	...	1	1	...	...	1	...	...	...	...	...	1	...	...	1
Children's Court.....	4	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
Domestic Relations Court.....	6	3	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fifth District Prison.....	5	5	...	1	...	...	1	1	...	...	1	1	1	...	...	...	1	...	...	1
Twelfth District Prison.....	4	2	2	1	...	...	1	...	...	...	16	1	...	...	...	...	17	...	5	95
Raymond Street Jail.....	220	2	218	1	76	...	77	3	14	1	...	...	...	...	...	...	...	...	...	...
Total.....	2,338	71	2,167	19	642	33	661	175	99	21	253	91	16	4	12	59	312	5	115	978



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TABLE 18.  
TESTS FOR VENEREAL DISEASE PERFORMED IN THE LABORATORY.

	1918.	1919.
Total number of Wassermann specimens received.....	63,166	71,145
Total number specimens (unfit) not examined.....	4,408	6,381
Total number positive Wassermann tests.....	13,624	12,688
Total number specimens received for complement-fixation test for gonorrhoea.....	8,509	10,224
Total number positive (gonorrhoea).....	897	404
Total number not examined (unfit).....	361	494
Total number smears for gonococci.....	9,789	12,024
Total number positive for gonococci.....	1,957	1,904

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TABLE 19.  
SOURCE OF REPORT OF VENEREAL DISEASES.

	Laboratory.				Institution.				Private Physician				Total.			
	Syphilis.		Gonorrhoea.		Syphilis.		Gonorrhoea.		Syphilis.		Gonorrhoea.		Syphilis.		Gonorrhoea.	
	1918.	1919.	1918.	1919.	1918.	1919.	1918.	1919.	1918.	1919.	1918.	1919.	1918.	1919.	1918.	1919.
	1918.	1919.	1918.	1919.	1918.	1919.	1918.	1919.	1918.	1919.	1918.	1919.	1918.	1919.	1918.	1919.
First Quarter.....	3,382	3,112	652	487	1,626	998	1,936	451	405	54	39	53	5,413	4,164	2,627	991
Second Quarter.....	4,322	3,214	871	561	909	753	822	307	119	40	72	98	5,350	4,007	1,765	1,055
Third Quarter.....	2,965	2,726	899	544	442	1,413	136	574	18	206	21	100	3,425	4,344	1,036	1,219
Fourth Quarter.....	2,185	3,096	417	596	926	2,932	405	1,683	21	671	88	133	3,132	6,699	910	2,323
Year Total.....	12,854	12,148	2,839	2,188	3,903	6,095	3,299	3,105	563	971	220	384	17,320	19,214	6,358	5,677

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TABLE 20.  
CHELSEA TREATMENT CLINIC.  
YEARLY REPORT 1919, ACCORDING TO THE MONTHS.

	New Cases.		Total.	Re-visits.	Treatment.		Gonorrhoea Treatments.	Wassermann Specimens Taken.	Smears Taken.	Advice Only.	Total New Patients Attending Clinic.	Readmitted.	Discontinued.	Total Patients Treated.
	Syphilis.	Gon.			Salvarsan.	Mercury.								
May.....	26	13	39	...	4	...	...	..	..	..	..	..	..	...
June.....	20	34	54	...	47	43	93	..	..	..	..	..	29	...
July.....	27	28	55	...	65	101	188	..	..	..	..	..	19	...
August.....	36	20	56	406	105	139	195	23	10	31	64	3	22	...
September....	30	24	54	547	144	196	251	38	8	14	67	2	28	150
October.....	39	18	57	602	113	238	251	51	12	31	52	5	16	150
November....	25	16	41	681	151	329	191	55	9	9	32	2	23	188
December....														
Total....	203	153	356	2,236	—629	—1,016	1,169	167	39	85	215	12	137	488

## BUREAU OF PREVENTABLE DISEASES

TABLE 21.  
SYPHILIS AND GONORRHEA CASES BY BOROUGHES

	MANHATTAN.			BRONX.			BROOKLYN.			QUEENS.			RICHMOND.			CITY.		
	Syphilis.	Gonorrhea.	Smears.	Syphilis.	Gonorrhea.	Smears.	Syphilis.	Gonorrhea.	Smears.	Syphilis.	Gonorrhea.	Smears.	Syphilis.	Gonorrhea.	Smears.	Syphilis.	Gonorrhea.	Smears.
January.....	851	58	115	101	8	16	356	53	27	10	1	6	7	..	1	1,325	120	165
February.....	1,526	1,180	88	87	21	4	263	17	33	18	1	2	4	..	1	1,898	1,219	128
March.....	1,369	576	131	92	10	18	315	67	18	33	1	..	24	..	..	1,454	184	109
April.....	1,265	290	99	80	3	20	321	19	54	22	4	7	9	..	1	1,813	606	211
May.....	1,315	288	127	89	12	26	380	130	24	20	4	8	6	..	1	1,385	256	157
June.....	1,775	84	65	70	8	13	316	29	55	21	..	5	5	..	..	1,702	325	138
July.....	1,065	330	168	78	23	16	349	90	35	18	1	1	16	..	..	1,294	149	196
August.....	833	175	179	69	30	13	303	35	19	29	1	6	8	..	..	1,733	336	193
September.....	762	100	112	107	19	26	110	110	19	37	1	4	10	..	4	1,422	258	132
October.....	1,262	98	128	174	28	22	422	65	14	21	1	6	21	..	..	2,143	431	153
November.....	840	173	61	81	1	16	403	121	21	33	1	1	10	..	1	1,291	215	106
December.....	1,229	82	32	133	23	2	293	47	49	25	11	6	13	..	..	1,474	413	239
Year.....	12,514	3,683	1,273	939	151	171	256	103	25	32	2	3	2	..	..	1,161	190	113
	11,775	2,092	1,134	1,730	230	189	302	172	79	31	2	4	13	..	..	1,248	381	275
	12,514	3,683	1,273	939	151	171	311	89	48	42	1	8	14	..	11	1,236	211	205
							238	37	8	16	9	4	10	..	..	917	99	58
							454	164	28	32	15	5	25	..	3	1,947	313	186
							286	37	33	30	..	5	43	..	..	1,260	121	122
							491	61	13	30	5	2	7	..	..	1,890	262	49
							317	44	19	26	4	3	35	..	..	1,345	256	111
							945	491	43	78	12	8	23	..	..	3,269	1,602	177
							144	44	9	15	2	4	8	..	..	843	151	85
							470	19	52	41	1	11	13	..	..	1,540	125	197
							201	58	32	14	..	..	4	..	1	944	145	162
							1,498	373	391	44	68	154	21	28	28	19,214	3,885	1,792
							595	383	257	42	45	184	12	4	4	17,320	4,483	1,875

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TABLE  
MEDICAL ADVISORY SERVICE  
BOROUGH OF

	Daily.	Sex.		Marital State.		Birth.		Occupation.		Unemployed.	Source of Infection.		
		Male.	Female.	Single.	Married.	Foreign.	American.	Skilled.	Unskilled.		Public Prostitute.	Clandestine Prostitute.	Other.
January.....1919	240	214	26	161	79	111	129	160	80	109	144	38	58
1918	282	247	35	210	72	112	70	250	32	62	126	24	25
February.....1919	199	171	28	139	60	86	113	145	54	85	119	40	40
1918	267	221	46	190	77	100	167	248	19	72	130	25	32
March.....1919	229	211	18	159	70	100	129	176	53	103	158	37	34
1918	290	263	27	217	73	119	171	279	11	82	152	33	15
April.....1919	227	210	17	161	66	121	106	168	59	77	159	38	30
1918	348	317	31	267	81	135	212	334	14	59	148	28	28
May.....1919	304	282	22	207	97	143	161	240	64	112	220	37	47
1918	281	255	26	225	56	126	154	268	13	32	138	19	9
June.....1919	310	283	27	209	101	164	146	202	108	128	203	58	49
1918	186	166	20	155	31	78	108	176	10	16	105	11	1
July.....1919	341	308	33	250	91	174	177	240	101	113	205	63	73
1918	244	219	25	156	69	96	152	182	58	45	125	27	18
August.....1919	293	245	48	212	81	157	136	183	110	52	200	42	50
1918	218	191	27	178	40	93	125	211	7	15	119	14	7
September.....1919	236	211	25	178	58	118	118	138	98	32	164	26	46
1918	213	186	27	166	44	90	123	203	10	13	102	14	6
October.....1919	312	267	45	216	76	163	149	218	94	64	197	45	70
1918	159	141	18	113	46	72	87	53	107	19	45	11	5
November.....1919	217	198	19	163	54	112	105	157	60	61	146	30	41
1918	175	154	21	125	50	60	115	142	33	19	88	12	4
December.....1919	203	177	26	148	55	138	65	172	31	30	127	26	50
1918	181	160	21	127	57	93	90	35	48	91	109	22	47
Total.....1919	3,111	2,777	334	2,217	894	1,597	1,524	2,199	912	969	2,082	481	608
1918	2,844	2,520	324	2,145	699	1,174	1,664	2,381	362	525	1,387	240	197



# BUREAU OF PREVENTABLE DISEASES

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## FOR VENEREAL DISEASE MANHATTAN.

Nature of Infection.			Other Diseases.	Previously Treated by						Referred to		Revisits.	Source of Reference				
Syphilis.	Gonorrhoea.	Sex Neurosis.		Quacks.	Physicians.	Dispensaries.	Drug Stores.	Self-treated.	No Treatment.	Physicians.	Institutions.		Physicians.	Newspapers.	Sign.	Friend.	Otherwise.
117	79	21	23	4	90	72	9	4	61	93	147	147	59	1	67	95	18
140	65	10	139	15	69	43	2	1	83	72	186	59	..	76	136	11	11
60	49	17	73	3	54	79	12	5	48	60	139	130	16	..	64	112	7
131	74	16	53	9	75	60	7	18	5	71	74	175	52	1	68	130	14
87	61	18	62	8	53	97	9	11	53	58	171	167	38	..	47	132	12
131	85	18	65	8	111	64	3	8	12	94	81	173	69	7	83	112	19
70	82	18	57	10	33	122	6	6	50	47	180	252	13	..	69	127	18
157	101	19	71	3	116	77	4	5	7	116	83	189	81	7	92	153	16
113	88	37	66	8	90	143	11	1	51	73	231	258	24	18	66	146	50
108	93	18	72	3	71	82	1	3	4	92	77	179	25	3	99	151	5
93	104	36	66	5	96	115	27	11	65	60	223	254	27	16	87	157	16
54	64	10	58	2	32	53	2	3	1	52	57	149	4	1	64	109	6
100	109	32	101	14	92	176	8	19	33	78	263	284	9	10	98	193	18
96	89	13	50	5	82	54	2	3	31	58	69	167	15	24	45	135	24
92	73	4	128	5	57	104	3	9	105	47	147	127	12	4	56	178	38
77	77	9	55	6	44	34	1	5	5	49	52	153	5	3	67	140	2
84	58	7	93	3	41	130	1	4	48	25	208	231	10	1	34	119	95
80	68	4	61	4	44	40	1	6	2	42	45	137	2	1	57	148	2
87	92	27	86	19	76	106	2	10	75	25	95	221	66	18	24	74	111
63	53	2	41	1	47	16	5	7	14	16	47	65	8	8	14	44	2
66	52	4	93	3	44	130	1	7	30	27	125	183	9	..	20	87	100
69	73	11	35	5	43	29	1	..	9	28	47	110	1	26	112	3	2
61	46	2	94	..	41	100	..	4	56	31	124	174	18	..	43	69	59
81	57	4	45	4	85	37	1	5	37	66	104	114	12	2	71	62	10
1,030	993	224	941	82	767	1,374	87	91	692	624	2,052	2,174	301	68	665	1,599	542
1,177	889	134	945	65	819	589	26	62	295	764	1,014	1,797	320	61	762	1,472	123

## ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

TABLE 23.  
MEDICAL ADVISORY SERVICE FOR VENEREAL DISEASES.  
(Borough of Brooklyn.)

	During 1918.			During 1919.		
	New Patients.	Old Patients.	Wassermann Tests.	New Patients.	Old Patients.	Wassermann Tests.
January.....	14	19	460	33	31	549
February.....	32	26	476	41	35	449
March.....	29	21	540	59	44	518
April.....	31	29	483	60	67	474
May.....	22	36	531	74	55	545
June.....	27	30	406	56	74	613
July.....	27	29	481	77	79	543
August.....	21	71	483	78	95	515
September.....	29	42	469	45	65	519
October.....	28	18	324	76	102	637
November.....	27	26	369	58	177	576
December.....	26	29	404	45	162	464
Total.....	313	376	5,426	702	986	640

## PATIENTS TREATED.

	Syphilis.	Gonorrhoea.
Total injections of Salvarsan.....	71	2
Total injections of Mercury.....	170	..
	238	..

TABLE 24.  
MEDICAL ADVISORY SERVICE FOR VENEREAL DISEASES.  
(Borough of Bronx.)

	1919.			1918.		
	New Patients.	Old Patients.	Wassermann Tests.	New Patients.	Old Patients.	Wassermann Tests.
January.....	12	4	69	8	..	70
February.....	6	2	74	6	..	73
March.....	6	3	93	3	..	41
April.....	8	4	70	8	..	85
May.....	2	6	84	2	..	61
June.....	8	1	76	4	..	61
July.....	45	4	82	5	..	69
August.....	41	20	86	4	..	65
September.....	28	16	83	6	..	76
October.....	45	14	96	3	..	58
November.....	33	24	87	4	..	51
December.....	22	28	85	5	..	78
Total.....	256	126	985	58	..	788

## BUREAU OF PREVENTABLE DISEASES

TABLE 25.  
MEDICAL ADVISORY SERVICE OF THE FEDERAL AND DEPARTMENT CLINICS FOR THE YEAR 1919.  
(Excluding Manhattan Central Office Clinics.)

Month.	Chelsea.			Stuyvesant.			Washington.			Jefferson.			Tremont.		
	Day Session.	Night Session.	New Patients.	Revisits.	Day Session.	Night Session.	New Patients.	Revisits.	Day Session.	Night Session.	New Patients.	Revisits.	Day Session.	Night Session.	New Patients.
May.....	..	..	39	..	1	5	3	..	1	10	20	5	71	3	..
June.....	..	..	54	..	8	9	4	..	11	8	26	35	43	11	3
July.....	..	..	..	..	13	8	3	6	8	4	15	10	53	3	12
August.....	..	..	55	..	11	11	8	..	8	6	26	15	81	22	14
September.....	23	..	56	406	12	17	6	3	6	2	14	6	39	6	5
October.....	38	..	54	547	5	12	10	..	24	8	32	10	40	10	6
November.....	51	..	57	602	23	33	6	4	25	11	35	24	45	22	10
December.....	55	..	41	681	9	33	9	3	15	4	32	20	59	15	18
Total.....	167	..	356	2,236	71	223	55	18	102	53	200	125	431	89	68
															135

TABLE 25—Continued.

Month.	Prospect.			Eastern District.			Brownsville.			Queens Plaza.			Richmond.		
	Day Session.	Night Session.	New Patients.	Revisits.	Day Session.	Night Session.	New Patients.	Revisits.	Day Session.	Night Session.	New Patients.	Revisits.	Day Session.	Night Session.	New Patients.
May.....	470	143	76	57	10	3	..	2	2	6	9	5	..	7	1
June.....	329	67	43	58	7	1	..	9	14	2	23	10	4	3	17
July.....	420	121	74	76	21	2	3	6	9	1	8	6	3	2	8
August.....	399	112	78	79	6	3	7	4	9	..	23	8	9	3	11
September.....	272	78	35	45	5	..	5	4	7	..	7	4	9	1	5
October.....	248	102	39	45	3	2	6	3	6	1	7	1	4	3	7
November.....	423	126	58	167	5	..	5	4	7	..	10	3	6	2	5
December.....	398	151	50	194	6	..	5	3	10	..	6	..	2	2	3
Total.....	3,059	900	453	721	63	10	31	20	60	4	93	37	28	28	56
															75

*Occupational Clinic.*

The work of the Occupational Clinic in Manhattan is briefly summarized in the attached Table 26. The necessity of distributing the clinic physicians doing this work to various boroughs has resulted in a reduction in the number of cases of foodhandlers examined by the Occupational Clinic in the Borough of Manhattan. In the latter borough in the first year of our work in this field, our clinic physicians examined 42,000 foodhandlers, during the year just gone, we examined less than 13,000.

This work is so important that it is extremely regrettable that we have not been able to make it more significant than it was in the first year of its establishment. The work is important, both as regards the periodic medical examinations, and as a means of protecting the citizens of New York from affected foodhandlers.

The attached Table 26 is submitted in connection with the work of the Manhattan Occupational Clinic.

*Special Study*—During the year, a study was made by physicians assigned to the Occupational Clinic, Borough of Manhattan, among one hundred and seventy members of Franklin Union No. 23, composed of pressmen, feeders, and others engaged in the printing trade, who were examined at union headquarters. This study which was conducted in a thorough and careful manner revealed nothing of striking interest that would in any way indicate that pressmen are subject to unusual dangers. The facts disclosed by this examination were such as one would expect to find among any group of occupied individuals whose work occasionally calls for considerable physical effort. The prevalence of tuberculosis, degenerative diseases, and of other special physical defects, was normal as compared with other industries. We were extremely surprised to learn that lead poisoning which one might with reason expect to be abnormally prevalent among pressmen, was practically absent.

One active case of pulmonary tuberculosis was found, and six arrested cases. Ten cases of chronic endocarditis were discovered, and in addition, one of chronic myocarditis and one case of syphilitic aortitis. There were a number of cases in which abdominal pain or colic was found; these numbered all told, 84 cases. Eighty-one of these workers were suffering from marked constipation. In the absence of muscular weakness or paresis, or of basophilic granulations, or of the lead line, or other symptoms, it was impossible to say whether these cases were cases of lead poisoning. Unfortunately, we could not secure the co-operation of any chemist of the Department of Health or of any outside agency to make the necessary examinations for lead in the urine, which alone would have enabled us to judge whether any of these individuals were suffering from lead poisoning. In

## BUREAU OF PREVENTABLE DISEASES

view of the fact that a number of these individuals work in an environment in which lead dust is present frequently in very considerable quantities, it is very likely that cases of lead poisoning were present among those who complained of constipation and abdominal colic; but it would be unscientific and unwarranted to make any deductions in the absence of more definite confirmatory evidence of clinical or laboratory character.

Table 27 gives the cases of all diseases reported during 1919 to the Bureau of Preventable Diseases.



## ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

TABLE 26.  
EXAMINATIONS IN OCCUPATIONAL CLINIC, 1919.  
(MANHATTAN.)

	Bakers.		Food Handlers.		Tuberculosis Diagnosed.		Syphilis Diagnosed.		Gonorrhea Diagnosed.		History of Typhoid.		Suspected Tuberculosis.	
	P. P.	Cl.	P. P.	Cl.	P. P.	Cl.	P. P.	Cl.	P. P.	Cl.	P. P.	Cl.	P. P.	Cl.
1919														
January.....	56	161	7,669	554	8	...	5	7	1	1	83	25	43	74
February.....	747	145	7,899	638	6	11	5	9	...	...	75	27	52	87
March.....	1,599	190	5,831	741	1	4	4	13	...	2	73	21	27	92
April.....	2,357	221	3,384	660	4	1	9	7	1	...	34	13	1	44
May.....	557	230	3,029	507	3	5	...	4	1	1	67	12	10	49
June.....	643	353	2,669	337	10	2	6	4	...	...	40	10	1	34
July.....	130	117	2,034	210	...	4	...	3	...	1	60	7	18	14
August.....	336	115	2,097	128	...	1	...	2	...	...	31	9	9	9
September.....	411	68	2,072	166	...	6	...	6	1	...	25	7	7	17
October.....	530	135	2,480	253	...	10	...	19	...	...	64	14	3	4
November.....	621	179	1,859	197	1	...	4	12	...	...	67	8	12	11
December.....	352	53	2,064	125	2	2	1	13	1	...	46	13	9	5
Total.....	8,339	1,967	43,057	4,516	36	46	36	99	5	7	665	166	192	440

## BUREAU OF PREVENTABLE DISEASES

TABLE 27.  
BUREAU OF PREVENTABLE DISEASES.  
CASES OF PREVENTABLE DISEASES REPORTED, 1919.

	Typhoid Fever.	Smallpox.	Measles.	Scarlet Fever.	Whooping Cough.	Diphtheria.	Leptosy.	Mumps.	German Measles.	Chicken Pox.	Glanders.	Anthrax.	Rabies.	Tetanus.	Tuberculosis.	Syphilis.	Gonorrhea.	C. S. M.	Polymyositis.	Typhus.	Pellagra.	Trichinosis.	Malaria.	Influenza.	Pneumonia.
<b>MANHATTAN:</b>																									
First quarter.....	45	3	379	652	58	1,827	275	54	547	..	..	3	..	..	2,015	2,617	576	38	2	1	..	..	2	11,484	3,881
Second quarter.....	51	7	1,288	530	70	1,964	462	111	1,227	..	..	1	..	..	2,256	2,217	543	46	4	2	..	..	3	673	662
Third quarter.....	151	1	449	144	165	916	2	138	34	193	..	3	..	..	1,339	2,806	581	25	3	4	..	..	12	343	27
Fourth quarter.....	160	1	2,415	361	282	1,191	351	37	572	..	..	..	..	..	2,103	4,135	1,526	23	9	2	..	..	12	682	682
Total.....	407	12	4,531	1,687	575	5,898	4	1,226	236	2,539	..	8	..	6	7,713	11,773	3,326	142	18	9	..	..	29	12,516	5,252
<b>BROOKLYN:</b>																									
First quarter.....	6	..	45	281	13	753	1	41	13	118	..	..	..	..	440	406	74	12	..	..	..	..	1	3,006	674
Second quarter.....	12	..	156	214	27	755	..	107	17	271	..	..	..	..	463	496	71	9	1	..	..	..	1	2,224	180
Third quarter.....	58	..	57	60	60	295	..	39	3	31	..	..	..	..	349	362	116	8	..	1	..	..	3	35	28
Fourth quarter.....	26	1	1,130	170	107	454	..	70	24	105	..	1	..	..	508	466	158	8	..	..	..	..	1	96	202
Total.....	102	1	1,388	715	207	2,253	1	257	57	525	..	1	..	..	1,760	1,730	419	34	5	1	..	..	6	1,361	1,084
<b>BROOKLYN:</b>																									
First quarter.....	20	..	124	626	46	1,372	1	288	36	555	..	2	1	2	1,466	1,051	319	28	..	..	..	..	..	6,604	2,039
Second quarter.....	29	3	417	461	96	1,230	..	427	69	763	..	..	1	3	1,025	1,186	416	48	3	..	..	..	2	251	343
Third quarter.....	132	..	89	133	219	952	..	44	12	72	..	..	..	..	953	1,021	457	21	5	..	..	..	1	7	18
Fourth quarter.....	78	..	665	416	320	1,225	..	124	19	338	..	..	2	3	907	1,906	679	14	6	..	..	..	3	207	786
Total.....	259	3	1,295	1,636	681	4,389	1	883	136	1,728	..	5	4	9	4,363	5,161	1,871	111	14	..	..	..	12	7,069	3,186
<b>QUEENS:</b>																									
First quarter.....	2	1	19	136	10	262	..	41	3	145	..	..	..	..	81	53	20	8	2	..	..	..	..	1,386	416
Second quarter.....	5	..	136	178	9	292	..	72	10	186	..	..	..	..	145	83	19	9	..	..	..	..	..	60	52
Third quarter.....	42	..	47	40	24	173	..	15	1	4	..	..	1	2	77	106	32	1	4	2	..	..	1	1	2
Fourth quarter.....	16	..	317	91	88	431	..	30	10	62	..	..	..	..	239	149	39	1	..	..	..	..	2	29	59
Total.....	65	1	519	445	131	1,158	..	158	24	377	..	..	1	6	542	391	110	19	4	2	..	..	3	1,476	529
<b>RICHMOND:</b>																									
First quarter.....	..	..	13	44	8	81	..	60	3	60	..	..	..	..	62	37	2	5	..	..	..	..	..	763	236
Second quarter.....	2	..	41	30	6	72	..	28	6	25	..	..	..	..	37	25	7	..	..	..	..	..	..	19	18
Third quarter.....	8	1	13	36	3	36	..	3	9	7	..	..	..	..	37	49	32	2	..	..	..	..	..	..	7
Fourth quarter.....	11	..	394	33	34	124	..	49	..	65	..	..	..	..	37	43	10	1	1	..	..	..	..	14	67
Total.....	21	1	461	111	64	316	..	140	9	157	..	..	..	1	192	154	51	11	1	..	..	..	..	796	328
<b>CITY:</b>																									
First quarter.....	73	4	580	1,739	135	4,295	2	705	109	1,425	..	5	1	1	4,064	4,161	991	91	4	1	..	..	3	23,243	7,246
Second quarter.....	99	10	2,038	1,413	211	4,313	2	1,096	213	2,412	..	..	1	7	3,945	4,007	1,056	115	8	..	..	..	6	1,227	1,255
Third quarter.....	391	2	655	371	481	1,985	2	229	50	317	..	2	1	6	2,767	4,344	1,218	62	14	7	..	..	23	59	82
Fourth quarter.....	291	2	4,921	1,071	831	3,421	..	624	90	1,142	..	5	2	7	3,791	6,699	2,412	49	19	2	..	..	18	689	1,796
Total.....	854	18	8,194	4,594	1,658	14,011	6	2,661	462	5,326	..	14	5	21	14,570	19,214	5,677	317	44	12	..	..	50	25,218	10,379

LW.

## BUREAU OF LABORATORIES.

The work of the Bureau of Laboratories has been carried on under seven Divisions namely: I, Administration; II, Media and Sterilization; III, Diagnosis; IV, Microbial Sanitary Examinations; V, Production of Serums and Vaccines; VI, Applied Therapy; VII, Special Investigations.

The regular staff consists of a director, 5 assistant directors, 1 medical inspector, 1 pathologist, 1 inspector of foods, 21 bacteriologists, 1 chemist, 1 chief clerk, 1 librarian, 2 stenographers and typewriters, 3 typewriting copyists, 11 clerks, 6 bacteriological diagnosticians, 65 laboratory assistants, 18 laborers, 74 helpers, and 1 messenger.

The complete volume of work, so far as it can be indicated by figures, is recorded on special forms, filed semi-monthly, quarterly, and yearly in the Division of Administration. A condensed report is sent semi-monthly to the Commissioner.

The most noteworthy thing during the past year, outside of the routine work, is the investigation of acute respiratory infections undertaken in conjunction with the United States Public Health Service. The Divisions of Preventive Medicine of Harvard, and of Chicago Universities, and the Metropolitan Life Insurance Company. The results, so far obtained, are given under Special Investigations.

### *The Division of Administration.*

This Division includes the organization and executive control of all work, such as (1) The standardization and apportionment of work and workers, (2) The ordering of supplies, (3) Bookkeeping for stores and production, (4) Other clerical work, consisting chiefly of letters and official reports. The determination of unit costs has been discontinued.

The Divisions, other than those of administration and special investigations are divided into two groups, one group consisting of three divisions, namely, the Divisions of Media Preparation, of Diagnosis, and of Microbial Sanitary Examinations, is placed under the immediate charge of the First Assistant Director, and the second group, namely the Divisions of Production and of Applied Therapy, is under the charge of the Second Assistant Director. The Division of Special Investigations is made up, as usual of the investigative work of all the Divisions.

### *Concentration of Antitoxic Plasma.*

The various operations have been carefully studied. Some changes in the technic have been made, resulting in a very material saving in labor, time and supplies. With the same number of workers the plasma concentrated (diphtheria and tetanus), has been increased from 1,145,850 c.c., in 1918, to 3,256,600 c.c. in 1919. The changes are as follows: (a) A

## BUREAU OF LABORATORIES

new press, which was in stock, was put into use, much more uniform pressure being obtained. (b) The heating tank has been fitted with a steam distributing system, which insures even heating in all parts of the tank. (c) Filter paper has been replaced by cloth, for the collection of the euglobulin fraction, resulting in a saving of filter paper, and of labor in handling the precipitate. (d) Attempts have been made to collect the pseudoglobulin fraction on cloth. To date, the results have not been entirely successful, but further experiments are being carried out. (e) The pseudoglobulin fraction after draining is transferred to, and pressed between, cloths, thereby saving paper formerly used to absorb the liquid and reducing the time for the pressing to about 36 hours. Formerly, the operation required six to ten days.

### *Distribution of Living Organisms.*

All living microorganisms sent out by this Bureau (about 800 specimens during the year) were under the close supervision of the First Assistant Director and were sent in accordance with the state law and the State Board of Health regulations.

### *Division of Media and Sterilization.*

The production of media during the year 1919 has been carried on along the same general lines as before, with the exception of one change—this being the method of determining the reaction of culture media. The titrimetric method so long used with phenolphthalein as the indicator has been almost wholly supplanted by regulating the hydrogen ion concentration. The older titrimetric method takes into account the total acidity of a medium, whereas the hydrogen ion concentration method gives information as to the actual acidity, that is, the reaction under which the bacteria are actually placed for growth.

With this method the more delicate organisms, cultivated with difficulty under the best of circumstances, are assured cultural conditions more favorable for their development; also the production of such substances as diphtheria toxin is made more uniform.

A summary of the work of the Division is shown in the following table:

## ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

DIVISION OF MEDIA AND STERILIZATION.  
REPORT OF WORK DURING 1919 COMPARED WITH 1918, 1917, 1916, 1915, 1914.

Year.	Media. (Litres.)	Solutions. (Litres.)	Titration.	No. Orders Filled.	Swabs.	Tubes, Bottles, Flasks Filled.	Pieces of Glassware Washed.
1919.....	9,080	3,705	1,808	2,144	57,634	178,744	1,006,957
1918.....	10,078	3,860	2,451	1,896	70,946	230,488	1,018,825
1917.....	11,785	5,682	2,014	2,490	165,629	185,501	1,024,873
1916.....	10,593	4,934	1,649	2,627	64,627	288,528	1,036,688
1915.....	9,320	4,777	2,132	2,816	.....	275,706	871,275
1914.....	8,541	.....	1,820	850	.....	245,321	.....



## BUREAU OF LABORATORIES

## BACTERIAL CONTENT OF SAMPLES OF MILK AND CREAM EXAMINED DURING 1919.

The Milk Examinations for the year are given in detail in a large table which is on file in this Bureau and is available for reference. In the following table a summary is given.

Month.	MILK.										CREAM.					
	Grade A.						Grade B.						Grade B.			
	Raw.			Pasteurized.			Raw.			Pasteurized.			Pasteurized.			
	Within Grade.	In Excess of Grade.	No Report.	Within Grade.	In Excess of Grade.	No Report.	Within Grade.	In Excess of Grade.	No Report.	Within Grade.	In Excess of Grade.	No Report.	Within Grade.	In Excess of Grade.	No Report.	
January.....	314	65	2	135	34	7	1,292	333	17	670	211	28	248	96	4	
February.....	504	121	..	184	26	4	1,784	297	19	915	176	19	325	49	3	
March.....	597	88	8	163	28	5	1,756	362	23	924	219	26	307	108	3	
April.....	599	112	7	217	19	9	1,775	308	20	917	100	17	301	92	3	
May.....	566	191	7	192	36	2	1,104	724	16	874	257	23	281	166	7	
June.....	469	305	12	151	72	4	744	1,436	23	774	399	27	297	237	5	
July.....	495	180	5	153	64	6	723	1,018	17	667	335	27	231	156	3	
August.....	345	132	3	117	42	2	714	918	11	508	183	22	203	92	2	
September.....	386	223	1	124	52	1	595	920	5	619	338	17	242	131	3	
October.....	472	238	26	170	58	9	1,087	524	28	629	294	16	306	132	5	
November.....	568	179	3	190	24	4	1,482	270	17	747	143	7	296	105	5	
December.....	653	105	65	242	37	4	1,614	226	17	1,027	169	22	339	122	9	
Totals.....	5,968	1,939	139	2,038	492	57	14,670	7,336	213	9,271	2,824	251	3,376	1,506	52	

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## *Division of Microbial Sanitary Examinations.*

The work of this Division includes the routine bacteriological examinations of milk, water, and of disinfection tests, and the microbial examinations of other foods stuffs, of materials from trades, etc.

In addition to these regular samples the following were examined:

Milk from Department of Charity and Correction.....	2,637
Reconstituted Milk, and miscellaneous samples.....	148
Creams .....	141
Ice Cream .....	146

The volume of work done, including the water tests and the controls, is indicated by the following figures:—

Total number of specimens examined.....	52,204
Total number of plates made.....	100,247
Total number of fermentation tests.....	8,772

## WATER EXAMINATIONS.

(These examinations are for the Sanitary Bureau and the full interpretations are made by that Bureau.)

### BACTERIOLOGICAL EXAMINATIONS OF WATER MADE DURING 1919.

Source.	Good.	Fair.	Bad.	No Opinion Given.	Total.
<b>Manhattan:</b>					
Regular supply.....	127	40	9	2	176
Wells.....	1	3	1	..	5
Coolers and tanks.....	..	2	7	..	9
Baths, vicinity.....	7	10	17	..	34
Total.....	135	55	34	2	226
<b>BRONX:</b>					
Regular supply.....	2	2	..	..	4
Wells.....	..	..	1	..	1
Baths, including Riverside.....	1	4	12	..	17
Total.....	3	6	13	..	22
<b>BROOKLYN:</b>					
Regular supply.....	1	2	..	..	3
Wells.....	8	..	1	..	9
Baths, including beaches.....	6	3	14	..	23
Total.....	15	5	15	..	35
<b>QUEENS:</b>					
Regular supply.....	35	8	2	..	45
Wells.....	5	1	5	..	11
Drinking fountains.....	2	..	4	..	6
Baths, including beaches.....	..	1	..	..	1
Total.....	42	10	11	..	63
<b>RICHMOND:</b>					
Wells.....	7	14	44	..	65
Cisterns.....	2	5	3	..	10
Baths, including beaches.....	1	3	3	..	7
Total.....	10	22	50	..	82
<b>OUT OF TOWN:</b>					
Wells.....	14	7	13	5	39
Total.....	219	105	136	7	467

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*Examination of Oysters*—Six hundred and fifty-two samples of oysters were examined bacteriologically. Examinations were continued during the "closed season."

One hundred and twenty-two of the samples had a coliscore of 50 and over, i. e. should have been condemned under the rating of the American Public Health Association. By far the greater number of these high scores were obtained between March 1st and October 1st.

## *Division of Diagnosis.*

This Division is divided, chiefly for the sake of topographic convenience, into two Divisions, namely, Direct Diagnosis, and Indirect Diagnosis, the former carried on in the laboratories at headquarters, while Indirect Diagnosis includes those requiring a more varied technic, best managed in the laboratories at 16th Street

### DIRECT DIAGNOSIS.

Year.	Wassermann Tests.	Diphtheria (culture).	Tuberculosis (sputum).	Typhoid (Widal).
1919.....	64,965	112,708	41,615	5,940
1918.....	71,418	134,054	52,934	9,060
1917.....	123,500	141,284	54,808	13,208
1916.....	55,214	133,032	64,603	17,535

### Division for the Production of Serums and Vaccines

The following table gives the amounts of the more important products:

Product.	Produced in c.c.	
	1918.	1919.
Diphtheria toxin.....	725,000	1,288,000
Diphtheria antitoxin plasma.....	1,790,000	2,302,400
Tetanus toxin.....	281,150	440,555
Tetanus antitoxin plasma and serum.....	420,100	1,133,500
Antimeningitis serum.....	1,516,265	558,500
Antipneumococcus serum.....	873,575	475,100
Normal horse serum.....	231,625	396,630
Pertussis vaccine.....	78,180	38,400
Streptococcus vaccine.....	23,600	38,500
Pneumococcus vaccine.....	5,900	21,400
Staphylococcus vaccine.....	25,000	93,100
Gonococcus vaccine.....	46,000	46,100
Typhoid vaccine.....	117,700	41,900
Tuberculin vaccine.....	5,916	1,950
Smallpox vaccine (cow pox vaccine), see following:		

*Cowpox Vaccines*—An improvement in the vacuum method of filling capillary tubes has been devised by Mr. Thomas A. Watson of the Bureau. This improvement consists of introducing a small disc of wire gauze under the ends of the capillary tubes to raise them from the bottom of the container. The raising of the ends of the tubes aids greatly in obtaining a uni-

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form filling of the tubes. The loss, through imperfect filling, has thus been reduced from about forty to four percent. This saving has made it possible to use the vacuum method entirely for filling all of our output of capillary tubes.

A new style package for the small vial (10 vaccinations) has been introduced. This package consists of a firm cardboard box, with the necessary labeling printed on the cover. The vial is held securely in a small compartment. There is another compartment for the container, with ten needles and a small envelope with ten applicators. Also a folded paper with full directions for performing vaccination.

The large vial (50 vaccinations) has been discontinued. Instead the virus is disbursed in one c. c. amounts (when so ordered for the vaccination of large numbers at one time) at \$1.25, net, per c. c. If needles and applicators are desired by the purchaser, they are supplied at an extra charge of 20 cents for each fifty. The new style package, described above, for the ten vaccination vial will accommodate the vial holding 1 c. c.; also the fifty needles and fifty applicators. The practical discontinuation of the large vial has led to an increased output of small vials.

The epidemic of smallpox in Canada has given rise to an increased number of calls for vaccine virus, not only from Canada itself but also from those portions of New York and other states near the Canadian border.

As will be seen in the accompanying table, more virus was produced in 1919 than in 1918, and from fewer calves, as the 11,386 c. c. of virus was collected from only 35 calves; whereas in 1918 only 10,350 c. c. was obtained from 44 calves. The average yield of 325 c. c. per calf, in 1919, is greater than any year since 1915, when an average of 331 c. c. was produced.

The work on vaccine virus during 1919, as compared with that during the last five years is given in the following:

Year.	Calves Vaccinated.	Calf Crops Collected.	Average Amount per Calf. (c.c.)	Produced. (c.c.)	Disbursed. (c.c.)	Disbursed.		Small Vials.
						Capillary Tubes.	Large Vials.	
1919.....	35	35	325	11,386	10,644	263,738	.....	17,353
1918.....	46	42	246	10,350	7,460	250,916	2,067	4,500
1917.....	28	28	280	7,849	6,529	194,310	2,344	4,246
1916.....	26	26	300	7,810	5,682	154,623	2,427	4,609
1915.....	13	13	331	4,307	5,893	195,605	2,153	3,719
1914.....	46	47	250	11,764	9,480	247,720	6,352	3,852

## Work on Rabies.

This Bureau furnished rabies vaccine, during the year, for 414 persons. These cases were located as follows:

City of New York..... 270

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State of New York.....	65
State of New Jersey.....	26
State of Connecticut.....	13
State of Rhode Island.....	20
State of Pennsylvania.....	3
State of Massachusetts.....	7
State of Ohio.....	3
State of Kentucky.....	3
State of Tennessee.....	1
*West Indies.....	3
Total.....	414

The number of New York City cases, 270 in 1919, is far greater than the number (185) for 1918. These 270 cases are classified as follows:

Bitten by animal: which proved rabid by microscopical examination of brain.....	66
Bitten by animal: which proved clinically rabid, microscopical examination not made.....	3
Bitten by animal: (Stray) not found.....	80
Bitten by animal Examination not made†.....	25
Bitten by animal: Negative by animal test.....	61
Bitten by animal: Negative by observation of animal.....	35
Total.....	270

The recorded number of 69 cases bitten by rabid dogs during 1919 is more than twice the number in 1918, when 25 cases were recorded. The 69 cases were located in the various boroughs as follows:

Manhattan, 8; Brooklyn, 58; Queens, 3; Bronx, 0.

This marked increase in the number of persons bitten by rabid dogs in New York should be viewed with anything but satisfaction. As will be seen in the accompanying table, the effect of the muzzling ordinance, in 1915, and its enforcement during the succeeding years was to reduce the number of persons bitten by rabid dogs from 509, in 1914, to 25, in 1918. That the number has begun to increase, as shown by this year's figure of 69, points to lax enforcement of the muzzling laws, especially in Brooklyn which had the majority of the cases, 58.

The call for rabies vaccine, by Borough, was as follows: Manhattan 79, Brooklyn 159, Bronx 31, Queens 1. Total 270.

Below is given the table showing the statistics of patients treated during the past seven years. As will be noted three deaths occurred in 1919.

\* These cases came to New York for treatment.

† Under this heading are placed cases with history similar to following: Pet dog in family became ill and died suddenly without being seen by veterinarian. Body of dog was carried to offal dock. A day or two later the family exposed consulted physician in charge of clinic, who, considering circumstances suspicious, gave treatment.



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STATISTICS OF PATIENTS RECEIVING PASTEUR ANTIRABIC TREATMENT,  
1913-1919.

(Patients treated less than one week, pending diagnosis in biting animal, or refusing to continue after less than one week's treatment, are not included in this table. Mortality statistics are based on number of persons bitten by rabid animals and not on total number treated.)

Years.	Patients Treated.	Biting Animals Proved Rabid.	Percent- age of Positive Cases.	Mortality			
				Total Human Rabies Deaths Among Patients Treated.	Gross. Percentage of Cases in which Biting Animal was Rabid.	Deaths 15 days or more After End of Treat- ment.	Corrected. Percentage of Cases in which Biting Animal was Rabid.
1919	In City.....	228	69	30.3	2	0.0290	0
	Out of City.....	135	112	83.0	1	0.0090	0
	Total.....	363	181	49.9	3	0.0166	0
1918	In City.....	145	25	17.2	0	0.0000	0
	Out of City.....	269	230	85.1	0	0.0000	0
	Total.....	414	255	61.6	0	0.0000	0
1917	In City.....	175	48	27.4	0	0.0000	0
	Out of City.....	239	230	96.2	1	0.0043	1
	Total.....	414	278	61.8	1	0.0035	1
1916	In City.....	115	40	34.8	1***	0.025	0
	Out of City.....	131	114	87.8	0	None	0
	Total.....	246	154	63.0	1	0.025	0
1915	In City.....	220	124	56.2	0	0.000	0
	Out of City.....	206	164	79.6	1	0.006	0
	Total.....	426	288	67.6	1	0.0034	0
1914 **	In City.....	509	355	69.7	2	0.0056	1
	Out of City.....	343	258	75.2	1	0.0038	0
	Total.....	852	613	71.9	3	0.00489	1
1913	In City.....	528	373	70.6	3	0.008	1
	Out of City.....	447	359	80.0	1	0.0028	0
	Total.....	975	732	75.0	4	0.00546	1

\*\*1914 Muzzling ordinance adopted in July and put in operation in the Autumn.

1915

1916 } Muzzling ordinance in force. Note reduction of number of patients requiring  
1917 } Pasteur treatment in City.  
1918 }

\*\*\*Completed treatment September 1, 1916. Died of Rabies March 9, 1917.

# BUREAU OF LABORATORIES

## *Division of Applied Therapy.*

The report of this Division for the year shows a decrease in the work as compared with 1918, chiefly on account of the falling off in the number of cases of epidemic meningitis, from 143 to 61. The number of cases of epidemic meningitis for 1918 was the highest since the work has been in progress. The number of cases of tuberculous meningitis also decreased. Other forms of purulent meningitis, especially influenzal, showed a slight increase. It is of interest that one case of staphylococcic meningitis recovered. This is the only recovery in our experience, and one of very few on record.

The most interesting part of the year's work was the study of cases of encephalitis. These began to appear in the autumn of 1918. The etiology is still in doubt. Attempts at transmission to monkeys by the intracranial inoculation of autopsy material have been unsuccessful. The spinal fluid findings are similar to those of poliomyelitis, and probably represent the reaction of the meninges to an inflammatory process in the substance of the brain and cord.

It is the opinion of most observers both here and abroad that it is connected in some way with the epidemic of influenza, on account of its simultaneous appearance in all countries during the late epidemic, its reappearance simultaneously with the second epidemic of influenza this winter, and historical accounts that show that previously these two conditions have been associated.

TABLE OF CASES OF MENINGITIS EXAMINED

	Consulta- tions	New Cases.	Lumbar Puncture	Inocula- tion
Epidemic.....	254	61	252	252
Tubercular.....	77	61	71	..
Influenzal.....	26	8	26	26
Pneumococcus.....	14	8	14	14
Streptococcus.....	19	4	19	19
Staphylococcus.....	26	2	26	26
Syphilitic.....	1	1	1	1
Colon Bacillus.....	5	1	5	5
Poliomyelitis.....	14	14	14	..
Encephalitis.....	81	61	72	..
Other Diseases.....	130	123	96	..
Total.....	647	344	596	343

890 spinal fluids were examined, and 80 guinea-pig inoculations were made.

## *Division of Special Investigation.*

Besides the work already reported under the various Divisions, the following special investigations were undertaken.

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Studies on Epidemic Influenza—(a) In continuing the work on the relation of the influenza bacillus to epidemic “flu,” we showed clearly that, according to the absorption-of-agglutinin tests, no epidemic strain existed among those we isolated from many cases. (b) Specially mixed vaccine, has been used in a large group of controlled volunteers, the statistics from which are being compiled.

### *Incidence of Common Colds.*

An extensive study of common colds was undertaken. The investigations so far have shown (a) That a filtrable virus as the specific cause was not demonstrable. (b) That no one specific organism was demonstrable.

### *Culture Media for the Diagnosis of Diphtheria.*

A study of diphtheria organism grown on various media compared with the same strains grown on Loeffler's blood serum gave the following results:

(a) Throat cultures on Loeffler's blood serum, made with horse blood, showed as characteristic a picture of diphtheria bacilli, and gave a greater average of positive results than did the same cultures grown on the stock Loeffler medium made with beef serum shipped from Chicago.

(b) Throat cultures on Loeffler's blood serum made with dehydrated Loeffler's blood serum gave a greater proportion of positive results than with Loeffler's serum made in the usual way, with liquid serum from either beef or horse.

(c) Throat cultures on three media made with agar (vitamine agar, whole blood agar, and liver agar) gave almost wholly negative results in contrast to positively typical diphtheria cultures obtained from the same throats on Loeffler's blood serum.

(d) Throat cultures, and cultures of pure diphtheria strains, grown on glucose-agar, combined with increasing percentages of horse serum, did not show as good results as the same cultures grown on the standard Loeffler's blood serum. The latter part of the series (agar containing the higher proportions of serum), gave results sufficiently comparable to those on the Loeffler medium as to suggest that these agar and serum mixtures might prove useful in emergencies if the standard medium were not available.

### *Active Immunization Against Diphtheria.*

The investigations upon producing a permanent immunity have been actively continued. Two thousand infants, under ten days of age, were given three full sized injections. Tests at the end of eight months did not show the degree of immunization hoped for. Infants as young as these apparently do not respond well. Absolutely no deleterious results were noted.

## BUREAU OF LABORATORIES

The duration of the immunity in the children injected four and one-half years ago was found to have continued. It is safe to say, therefore, that three injections will produce sufficient anti-toxin to give immunity in 95% for at least four and one-half years.

About the only drawback to actively immunizing persons against diphtheria is the marked reactions which occur from protein substances, other than the specific toxin, in older children and adults.

Attempts to separate the toxin-antitoxin from the other protein material has been partially successful in that the pseudo-reactions have been less, but the immunizing results have not been quite as good. It is intended to continue the investigation.

In cooperation with the Bureau of Child Hygiene, the parents of the children in twenty schools were circularized, and where they were willing the children were Schick-tested, and, when found positive, given injections of toxin-antitoxin.

## BUREAU OF CHILD HYGIENE

During the year 1919, the organization of the Bureau of Child Hygiene was changed materially. More responsibility was vested in the individual Boroughs, and the administrative unit was changed from the *Division* to the *Borough*; that is, the type of organization by *functions* was changed to organization by *local units*.

The central staff of the Bureau now consists of the Director, Assistant Director, the Superintendent of Nurses, the Chief Clerk and the essential clerical and stenographic force. On account of the highly specialized nature of the following functions the supervisors in charge of each group are attached to the central office and report to the Director: Chief of the Division of Employment Certificates, Supervising Inspector of Open Air Classes, Supervising Oculist and Supervising Dentist. The organization in each Borough consists of a Borough Chief with the necessary district medical supervisors and supervising nurses and the field force. The entire policy for the work of the Bureau, outlining the program and putting it into effect, with complete supervision and responsibility for all functional activities, rests with the central staff. The local Borough Chiefs are responsible for the proper carrying out of all orders issued and necessary disciplinary measures connected with executive functions in the Boroughs under their jurisdiction.

### Baby Welfare Work During 1919.

The Division of Baby Welfare of the Bureau of Child Hygiene is charged with the responsibility of safeguarding infants and children from the pre-natal period until school entrance. Such obligation was discharged in the main through the Baby Health Stations, sixty of which were operated and maintained by the Department of Health during the year; 28 in Manhattan, 24 in Brooklyn, 4 in The Bronx, 3 in Queens and 1 in Richmond. The number of stations has gradually increased from the original organization of 15 in 1911, to 55 in 1912, 56 in 1913-14, 59 in 1915 and 60 in 1916, the additional station during 1919 being operated in the Borough of The Bronx.

As stated last year, these centres established for the supervision and care of infancy and early childhood were at first called Infants' Milk Stations. This term has now been discarded and they have been designated as "Baby Health Stations," a term broader and more comprehensive in scope and one calculated to emphasize the educational and prophylactic objects of the service, rather than the value of milk per se, as the essential factor in the control of infant morbidity and mortality. While established primarily for the care of babies under two years of age, other important activities have developed around these Baby Health Stations as centres for the preservation of child health and life, so that the more important functions of the bureau clearing through them, are as follows:

1. Inspection and supervision of expectant mothers—pre-natal care.
2. Supervision of the care and feeding of babies under two years of age.
3. District or home visiting by a corps of field nurses, throughout the year and particularly during the hot term.



## BUREAU OF CHILD HYGIENE

4. Physical examination of children of the pre-school age—two to six years—together with follow-up visits to the home for giving advice and instruction as to the physical defects found and ways and means for affecting a remedy or cure of the same.

5. Centres for other departmental as well as local social service activities, and for the co-operation of all agencies in the City interested in Child Welfare.

The organization of the division has remained substantially the same as in former years, namely, one inspector for three stations, attending each twice weekly, one nurse for each station, in attendance daily, and one nurse's assistant for each station, attending daily. While in former years provision was made through budgetary appropriation for the assignment of a large number of nurses from May to September, inclusive, in order to assist at the Baby Health Stations during the summer months when the attendance was unusually large, and, when children were more liable to become ill because of seasonal conditions, during 1919 only 87 months' nursing service were allowed for this type of work, as against 287 months during 1918, and approximately 275 months in other previous years. The policy of the Division, like that of the Bureau, in all of its activities, has been preventive rather than corrective, and the watchword has been "keep the well baby well."

### *Instruction and Supervision of Expectant Mothers.*

A point has been reached in the supervision of infancy where it appears that the number of infant deaths from congenital diseases is so great that it controls in large measure the curve of infant mortality. In fact, for several years past, statistics have shown that the number of infant deaths from congenital diseases alone was almost equal to or exceeded that of diarrhoeal diseases and respiratory diseases combined.

As far back as 1913 the bureau realized that any further material reduction in the infant mortality rate of the Greater City must come through organized effort to supervise expectant mothers. Congenital diseases bear no relation to errors in infant hygiene and dietetics, but are dependent within certain limits upon conditions in the mother, operative before, at, or shortly after birth of the child. For the past six years the bureau has emphasized the need and importance of a special corps of nurses for this phase of its activities and has submitted not only argumentative statistical data showing the great need of pre-natal care, but has shown from the results of the work accomplished by a limited corps of nurses in recent years that if the same methods of approaching the expectant mothers could be applied to the city at large, as was the case in the limited amount of work performed by these nurses, that there would result not only a reduction in the infant mortality rate as a whole, in the infant mortality rate from congenital diseases, fewer deaths during the first months of life, fewer still-births, fewer premature births, fewer cases of sore eyes, fewer accidents to children, and, not only an increased percentage of maternal nursing, an augmented number of deliveries by physicians instead of midwives, improved birth registration, care of infants in the early months of life, but, a decided reduction in the maternal mortality rate and in the accidents and injuries of children at birth.

Despite all this, however, no available force for conducting this type of work on a large scale has ever been placed at the disposal of the bureau. For several years past seven or eight nurses were assigned to this work by virtue of a special budgetary appropriation which allowed for the appointment of special nurses during the summer months. During the year 1919, owing to reduction in the budgetary allowance for these temporary nurses, because of a large number of vacancies in the nursing force, because of special surveys, studies and other activities, and because of resignations, only two or three nurses were enabled to take up this work, and even at that, irregularly. The result has been that during 1919 fewer expectant mothers have been supervised by the bureau than in any previous year since 1914, the first full year in which this work was conducted,

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although preliminary arrangements had been made for such work in the latter part of 1913. Nevertheless, although few cases of expectant mothers were supervised, the same experience of former years has been recorded, viz., that in the cases supervised the infant and maternal morbidity and mortality rates are far less than those of the city at large. With an annual birth registration of between 135,000 and 140,000, and with approximately 75,000 expectant mothers sorely in need of supervision annually, a corps of three to eight nurses, even when supplemented by the regular Baby Health Station nurses, could scarcely do more than scratch the surface of the problem. A nurse assigned to the instruction and supervision of expectant mothers, if she is to perform the work properly and if she is to give the expectant mother the full measure of advice necessary for making her pregnancy comfortable, her labor safe and her puerperium uneventful, and if she is to safeguard the health and life of the new-born infant, cannot proceed with her work in a perfunctory way. This type of work requires tact, judgment, conscientiousness, adaptability, perseverance and heart. It is no ordinary matter to instruct an expectant mother in a practical way. For that reason a "pre-natal nurse" cannot supervise conscientiously more than 300 to 400 mothers annually. It is therefore no exaggeration to say that, if the instruction and supervision of expectant mothers is to be conducted by the Department of Health in a way which would be productive of results, at least one pre-natal nurse should be assigned to each of the sixty Baby Health Stations in the Greater City. This number may appear large, and in a sense prohibitive, but it must be remembered that the field of activity is large and that the need is urgent and immediate. There appears little hope of affecting any great reduction in the infant mortality rate of this City in the near future, unless concerted effort is made in the direction of supervising expectant mothers. We have almost reached the limit in our control of diarrhoeal, respiratory and contagious diseases in infancy. Some improvement in the latter will undoubtedly be made, but not in amount sufficient to materially influence the total infant mortality rate.

In addition to the instruction of expectant mothers by the limited special corps of nurses, the regular Baby Health Station nurses offered similar instruction to these mothers, as they visited the stations or as they found them in their homes. This work was necessarily less intensive than that performed by the special corps of nurses, but was not without effect. This supplementary pre-natal service has in recent years reached the following number of expectant mothers:

Year.....	1914	1915	1916	1917	1918	1919
Number....	1968	1838	1620	2109	1634	4977

While in former years the pre-natal nurses only followed up the new-born babies for a period of one month, this work was further extended during 1919 to the end that new-born babies were supervised in so far as was possible with our migratory population for the entire period of the first year, either directly or indirectly through the agencies of the various Baby Health Station nurses.

As has been intimated, the inability of the bureau to conduct pre-natal work as extensively as the indication demonstrated was offset in a measure by a stimulus which our results gave other organizations to take up this work. In co-operation with the Department of Health, the Maternity Center Association has zoned or districted the Borough of Manhattan so as to keep within definite local or neighborhood confines the pre-natal, obstetrical and post-natal activities of a given area, to reach a larger number of mothers, to prevent overlapping and duplication of effort and to afford the public the greatest amount of good with a minimum of inconvenience. This type of work has been extended to other boroughs, and in the Borough of Brooklyn several pre-natal clinics were established during the year, and several hospitals established pre-natal clinics. In the Borough of The Bronx, the New York Milk Committee and later the Red Cross

## BUREAU OF CHILD HYGIENE

Chapter, co-operated with the Department of Health in furthering this phase of the activity. Physicians, midwives, maternity institutions, nurse's settlements and child welfare agencies have all shown an augmented interest and a greater effort at co-operation in the care of expectant mothers, and physicians have taken advantage of the nurses' advice to the patients under their direction. Midwives have gladly submitted to the Department the names of expectant mothers under their care for pre-natal advice. Maternity institutions have generously loaned themselves to the zoning idea and have actively co-operated in the examination and admission of mothers and have referred infants discharged from their service to the Baby Health Stations, while nurses's settlements have referred cases ante and post-partum to an increasingly gratifying degree. Charity organizations, philanthropic societies and individuals have become interested to the extent of assigning to and paying for nurses in this field and of providing material relief in the form of milk, maternity and baby outfits, foods, etc. The nurses have organized sewing classes and cooking classes for expectant mothers, which have proved not only of material benefit, but have afforded them a certain amount of social intercourse and relief from home duties so necessary for a proper and healthy mental attitude during pregnancy.

Still-births reported by midwives, in which suspicion existed that congenital syphilis was the cause, were visited by inspectors and nurses, and the mothers instructed with a view to securing a living child in a future pregnancy. The well-known high infant mortality rate from congenital diseases among the Negroes was attacked through the co-operation of The Association for Improving the Condition of the Poor, a special nurse being assigned by them in the Columbus Hill District to work exclusively among these people. It has become apparent that the death rate from congenital diseases is comparatively low among the Italians, Russians, Austro-Hungarians and relatively high among the Americans and Negroes. It is not unlikely that the future will tend towards a readjustment of this type of work, in that more attention will be given to native Americans than has been done in the past.

Further extension of the supervision of expectant mothers lies in the direction of compulsory notification of pregnancy, or, in the event of this being impossible, greater co-operation from midwives and maternity institutions in voluntarily reporting cases of expectant mothers registered with them; in forwarding to each newly married couple literature on the subject of the expectant mother; in providing measures, whereby each and every expectant mother at the time of registration with the prospective attendant at birth will be given educational literature on how to conduct herself during pregnancy, so as to maintain and improve her life and well-being, and insure her own safety and that of her new-born infant at the time of delivery.

In its efforts to control the high infant mortality rate from congenital diseases, with the limited force at its command, and to place at the disposal of as many expectant mothers as possible, concise and direct information relative to their care during pregnancy the bureau prepared during the year a pamphlet on pre-natal care. This pamphlet called the attention of future mothers to the importance of maintaining good health during the period of pregnancy and outlined fourteen points of advice and instruction. Some sound advice was also given to the father of the coming child. Inasmuch as the care of the child during the first month of life is intimately correlated to the pre-natal period of its existence, an "afterword" was added in this pamphlet, in which some twenty-one suggestions were offered as to the proper care of the child during this crucial period of its existence.

### *Supervision of the Care and Feeding of Babies Under Two Years of Age.*

Despite the social unrest, the strained economic conditions of the day, the high cost of living and other disturbing factors of the time, an infant mortality rate of

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81.6 per thousand children born was reported for the Greater City during 1919, the lowest infant mortality rate in the city's history, the nearest approach to this rate being in 1917, when it was 89. A comparative table of births, infant deaths and infant mortality rate for the last six-year period is as follows:

## CITY OF NEW YORK.

### DEATHS AND DEATH RATE—UNDER ONE YEAR—PER 1,000 BIRTHS REPORTED,

Year.	Total Births Reported.	Deaths Under One Year.	Death Rate Per 1,000 Births Reported.
1914.....	140,647	13,312	95
1915.....	141,256	13,866	98
1916.....	137,644	12,818	93
1917.....	141,564	12,568	89
1918.....	138,042	12,657	92
1919.....	130,377	10,639	81.6

The infant mortality rate by boroughs for the past four years was as follows:

### INFANT MORTALITY BY BOROUGH—1916, 1917, 1918, 1919.

Year.	Manhattan.	The Bronx.	Brooklyn.	Queens.	Richmond.	Total.
1916.....	102.2	74.1	87.9	93.6	93.6	93.1
1917.....	94.0	79.4	84.9	91.5	91.2	88.8
1918.....	96.1	77.3	90.4	92.9	105.0	91.7
1919.....	87.2	73.9	77.4	79.7	87.8	81.6

We find, therefore, for the City as a whole, there was a reduction of over ten points per thousand children born in the infant mortality rate, this representing a numerical decrease of 2,018 infant lives below that of 1918. A decrease in the birth registration during 1919 of some 7,665 below that of 1918 was a natural anticipation of the conditions surrounding the war.

The decrease in the City infant mortality rate was participated in by each and every borough, the greatest decrease occurring in the Borough of Richmond and the lowest in the Borough of The Bronx. The Borough of The Bronx, however, maintains, as it has for many years past, the lowest infant mortality rate of all the boroughs, albeit that the reduction in 1919 was less than in any of the other boroughs. The Borough of The Bronx, with an estimated population of over 660,000, may be compared with some of the ten larger cities in the United States, *e. g.*, St. Louis, Cleveland and Boston. From figures at hand, it appears that St. Louis will show the lowest infant mortality rate of all the ten larger cities in the United States during 1919, recording a rate of 75.4, with a birth registration of 13,570, and 1,021 infant deaths. The Borough of The Bronx during 1919 registered 14,788 births and 1,093 deaths, with an infant mortality rate of 73.9, thus showing a lower infant mortality rate than St. Louis, with which it may be reasonably compared. The Borough of The Bronx has shown this favorable status of infant mortality for several years for the following probable reasons: (a) A large Jewish population, among whom the mortality in all of the boroughs is comparatively low, and among whom breast-feeding is largely practiced; (b) a more mod-



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ern type of tenement dwelling than in some of the larger boroughs; (c) a large number of newly married couples, most of whom have had the advantages of more modern education, in the schools and in the high schools, and have at some time or other participated in the organization of the little mothers' leagues and health leagues of the bureau, in which lessons on hygiene and sanitation and baby care have been part of the program; (d) less congestion and overcrowding than in the larger boroughs; (e) the personal and individual care which most of the mothers give to their babies, instead of entrusting them to the care of servants and neighbors; (f) the relatively fewer infant institutions in the borough.

Reports at hand indicate that all of the ten of the larger cities in the United States will report a substantial reduction in the infant mortality rate during 1919. It would therefore have been surprising if New York City had lagged behind in this infant mortality reduction, which seems to have been common to practically all of the larger cities. In analyzing the cause for this record infant mortality rate for New York City the following suggestions present themselves:

(a) The momentum of the educational propaganda instituted by the Bureau of Child Hygiene, since its organization in 1908, is bearing fruit. This momentum is one of enormous proportions and readily realized and appreciated by those engaged in child welfare work. The education given the public is accumulative and carries over. Lessons taught to mothers for infants of former years are now applied to the newcomers. The public has come to learn the lesson of "keep the well baby well." The mother now knows what communities have also learned, that it costs less to prevent illness than to cure it.

(b) The public has been taught that healthy babies are an asset—unhealthy babies a liability. Mothers now concentrate on the baby. He is usually the first considered as regards diet, care, shelter, clothing and comfort. The money at hand is now first spent for the needs of the baby.

(c) The disproportion between food and living costs and wages which at first showed a debit on the side of wages has progressively changed, so that in many cases of unskilled labor the increased income more than counterbalances the increased cost of living. There is much truth in the statement recently made "that jobs are overpaid and positions are underpaid." Since the mass of workers are unskilled, the import of this statement is readily appreciated. The general public are now eating food and wearing clothes of the better kind, and living under as good, if not better, conditions than in peace times. There are many and notable exceptions, of course, in this regard, but the general truth of the statement holds, it seems.

(d) The nation-wide movement during war times and the early post-war period for better babies and better children has seemed to work out as it did in England, where in the second full year of the war, 1916, the infant mortality rate was 96, the lowest in the history of the United Kingdom. There it was due not only to a realization on the part of the general public that infant care was of prime importance, but to governmental grants of money for the protection of motherhood and infancy. Here, as a result of an awakening of the public consciousness and as a result of the co-operation of National, State and Municipal bodies, as well as of the co-operation of a large number of private organizations and individuals, the latter resulting as an outgrowth of the war, an unusual amount of attention has been directed towards the supervision of infants and children. The time has come when this civic consciousness has resulted in giving the baby a square deal.

(e) The absence of any epidemic and the low incidence of the commoner children's diseases has been a decided factor in this low infant mortality status. Epidemics, as previously noted, not only cause havoc by attacking infants and young children, but



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also, because of affecting the adult members of the family, rob these children of the care and necessities of life which are theirs in normal times.

(f) It is not impossible or unlikely that the prohibition wave has had some influence. With less alcoholic indulgence on the part of the fathers, and, fortunately, of the mothers, there arises not only more money for family needs and a general improvement of home conditions in general, but a general improvement in family moral tone, in better condition of health, greater family stability, and better earning capacity. A beginning has only been made in this direction, and time will demonstrate the blessings of prohibition, absolute or modified, in the health and general well-being not only of the children but in the adult population.

(g) The general health of the entire population during 1919 has been better than in many years, as may be seen from the following:

Total death rate, all causes, New York City, per 1,000 estimated population:

1910 .....	16.00
1911 .....	15.30
1912 .....	14.41
1913 .....	14.21
1914 .....	14.03
1915 .....	13.93
1916 .....	13.89
1917 .....	13.78
1918 .....	16.71
1919 .....	12.39

It is reiterated that with the better health of the heads of the family, comes better economic conditions, more money, better care of the children, and therefore better provision for their well-being.

(h) The increased interest of municipalities and private organizations and individuals in baby and child welfare has been mentioned. Throughout the period of the war the possibility of the usual effects of combat and its aftermath, namely, a high infant mortality and a decreased rate, has been constantly preached and has stimulated a large number of agencies and individuals to lend their time, energy and money towards the prevention of the errors of omission and commission made by other countries engaged in the war. The weight of this influence has been no small factor in helping to effect a reduction in infant mortality.

(i) The school boys and school girls have been allies of considerable moment in aiding child conservation. They have been responsible for bringing into the homes lessons on child diet and child hygiene, which were particularly emphasized in the school curriculum and through the Bureau of Child Hygiene representative during the year. They have been educated to play their part in the general improvement of family conditions and have learned many lessons which have been of incalculable value to the families as a whole.

(j) The education of the public by National, State and Municipal Food Conservation Committees and by many other committees of a semi-official or private nature in the proper purchase, preparation, selection and care of foods for infants and children, the relative value of these different foods, the adaptation of the same to meet racial characteristics and tastes, the instruction of how to make the dollar bring the greatest return, have all made an impression for good upon the health of infants and children.

(k) At the onset of the war, when a large number of doctors and nurses responded to the call to the colors, many expressed the fear that the dearth of professional talent would react unfavorably upon the community health. Strange to say, the reverse obtained and it was not altogether to be unexpected. This situation compelled many

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individuals, the large body of so-called neurasthenics, who in normal times not infrequently neglect their children because they have no time to think of anyone but themselves, to draw upon their own resources, to become more self-reliant and to assume responsibilities which are their own and which were formerly thrown upon the shoulders of others.

(1) The social and industrial unrest and the uncertainty of the future has made many families cautious in regard to spending money. There has been less gayety than in former years, less social gatherings in hotels and restaurants, and consequently more of the "stay at home" kind have been developed. Domesticity almost always lends itself to betterment of home conditions.

(m) As a result of the increased income among the unskilled classes, many of the laboring and middle classes have "gone to the country" during the summer and have thus afforded their children that change of air and environment which is conducive to an invigoration of mind and body, and with it to an increased vitality and resistance to disease.

As regards the main group diseases which cause deaths of infants, it is very evident that the favorable status of infant mortality in 1919 was due to the very noticeable diminution in the morbidity incidence and the mortality from contagious and respiratory diseases in infancy. While the infant mortality rate from contagious diseases was 4.3 for the Greater City in 1918, it was only 1.9 during 1919. Similarly, while the infant mortality rate for respiratory diseases in infancy was 21.7 during 1918, 15.5 was the rate recorded for 1919. The infant mortality rate from congenital diseases has remained practically stationary as it has for a great many years past, the rate being 38.7 during 1918 and 37.2 during 1919. The infant deaths from diarrhoeal diseases was slightly increased, the rate being 14.7 for 1918 as against 15.9 for 1919. All other diseases showed an infant mortality rate of 12.3 in 1918 as against 11.2 for 1919.

Irrespective of any and all other considerations, however, the outstanding fact remains, that an infant mortality rate of 81.6 for a city so large and so cosmopolitan as New York, and for one which records an annual birth registration far in excess of any other city in the United States, must be considered an accomplishment of no small merit and a tribute to the conscientious work of the employees of the bureau.

For several years past the bureau has made a special effort to keep in check or reduct the inordinately high infant mortality which exists among the Negroes, a rate which in former years was 100 per cent. higher than among the whites. During 1919 there were 3,604 Negro births recorded, with 545 infant deaths, or an infant mortality rate of 151 per thousand children born. This rate, while very high, is nevertheless considerably lower than that of previous years, as will be seen from the following tabulation:

CITY OF NEW YORK  
INFANT DEATH RATE PER 1,000 BIRTHS.

Year.	City Rate.	Whites.	Negroes.
1915.....	98.2	96.2	202
1916.....	93.1	90.7	193
1917.....	88.8	87.1	168.9
1918.....	91.7	89.7	170.8
1919.....	81.6	79.6	151

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An interesting feature in connection with the Negro infant mortality rate is, that while the city birth registration shows a decrease of over 7,000, the birth of Negro babies showed an increase during 1919, 3,604 births being recorded as against 3,272 for 1918; 2,990 for 1917; 2,530 for 1916; 2,614 for 1915.

### STILLBIRTHS.

The stillbirth situation, in so far as recorded cases are concerned, showed a more favorable status than for several years past, as will be seen from the following tabulation:

#### *Stillbirths Reported—City of New York.*

1915 .....	6,413
1916 .....	6,253
1917 .....	6,117
1918 .....	6,793
1919 .....	5,984

The unusually large number of cases recorded during 1918 was due, of course, to the wave of influenza, which, if it did not kill pregnant women by way of pneumonia, sepsis or hemorrhage, not infrequently resulted in stillbirth.

The following tables will show in detail the status of the infant mortality situation for the corresponding years 1918-1919 in the Greater City and in the individual boroughs:

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TABLE I.  
DEATHS OF CHILDREN UNDER ONE YEAR FROM CERTAIN CAUSES—DEATH RATES PER 1,000 BIRTHS REPORTED, 1918-1919.

	TOTAL DEATHS.						CONTAGIOUS.						RESPIRATORY.					
	City.	Man.	Bx.	Bklyn.	Qu.	Rich.	City.	Man.	Bx.	Bklyn.	Qu.	Rich.	City.	Man.	Bx.	Bklyn.	Qu.	Rich.
1918—Deaths.....	12,657	5,710	1,302	4,479	884	282	506	302	60	163	60	11	2,993	1,400	249	1,121	182	41
Death rate.....	91.7	96.1	77.3	90.4	92.9	105.1	4.3	5.1	3.6	3.3	6.3	4.1	21.7	23.6	14.8	22.6	19.1	15.3
1919—Deaths.....	10,639	4,928	1,093	3,679	715	224	248	126	25	75	16	6	2,114	989	209	754	132	30
Death rate.....	81.6	87.2	73.9	77.4	79.7	87.8	1.9	2.2	1.7	1.6	1.8	2.3	16.2	17.5	14.9	15.9	14.7	12.2

	CONGENITAL.						DIARRHOEAL.						ALL OTHER CAUSES.					
	City.	Man.	Bx.	Bklyn.	Qu.	Rich.	City.	Man.	Bx.	Bklyn.	Qu.	Rich.	City.	Man.	Bx.	Bklyn.	Qu.	Rich.
1918—Deaths.....	5,342	2,297	661	1,837	407	140	2,032	931	152	780	124	45	1,694	780	180	578	111	45
Death rate.....	38.7	38.6	39.2	37.1	42.8	52.2	14.7	15.7	9.0	15.7	13.0	16.8	12.3	13.1	10.7	11.7	11.7	16.8
1919—Deaths.....	4,852	2,139	569	1,678	352	114	2,067	978	155	742	139	53	1,358	696	135	430	76	21
Death rate.....	37.2	37.8	38.5	35.3	39.3	44.3	15.9	17.3	10.5	15.6	15.5	20.8	10.4	12.3	9.1	9.0	8.5	8.2

	TOTAL DEATHS.						CONTAGIOUS.						RESPIRATORY.					
	City.	Man.	Bx.	Bklyn.	Qu.	Rich.	City.	Man.	Bx.	Bklyn.	Qu.	Rich.	City.	Man.	Bx.	Bklyn.	Qu.	Rich.
1918—Deaths.....	16,959	7,663	1,685	6,094	1,149	368	1,465	750	137	444	113	21	4,963	2,254	413	1,922	302	72
Death rate.....	65.9	67.8	56.7	65.9	65.1	80.8	5.7	6.6	4.6	4.8	6.4	4.6	19.3	19.9	13.9	20.8	17.1	15.8
1919—Deaths.....	13,092	6,137	1,330	4,515	848	262	671	355	74	196	34	12	3,126	1,491	309	1,105	180	41
Death rate.....	51.9	55.3	47.3	49.4	48.8	58.8	2.7	3.2	2.6	2.1	1.9	2.7	12.4	13.4	11.0	12.1	10.4	9.2

	CONGENITAL.						DIARRHOEAL.						ALL OTHER CAUSES.					
	City.	Man.	Bx.	Bklyn.	Qu.	Rich.	City.	Man.	Bx.	Bklyn.	Qu.	Rich.	City.	Man.	Bx.	Bklyn.	Qu.	Rich.
1918—Deaths.....	5,370	2,308	665	1,848	408	141	2,413	1,097	178	935	149	54	2,748	1,254	292	945	177	80
Death rate.....	20.9	20.4	22.4	20.0	23.1	31.0	9.4	9.7	6.0	10.1	8.4	11.9	10.7	11.1	9.8	10.2	10.0	17.6
1919—Deaths.....	4,876	2,149	571	1,689	353	114	2,361	1,106	172	866	159	58	2,058	1,036	204	659	122	37
Death rate.....	19.3	19.3	20.3	17.4	20.3	25.5	9.4	9.9	6.1	9.5	9.1	13.0	8.2	9.3	7.2	7.2	7.0	8.3

TABLE I—Continued.  
DEATHS, 2-5 YEARS—DEATH RATE PER 1,000 ESTIMATED POPULATION, 2-5 YEARS.

	TOTAL DEATHS.						CONTAGIOUS.						RESPIRATORY.					
	City.			Bx.			City.			Bx.			City.			Bx.		
	Man.	W.	Qu.	Man.	W.	Qu.	Man.	W.	Qu.	Man.	W.	Qu.	Man.	W.	Qu.	Man.	W.	Qu.
1918—Deaths.....	4,060	1,740	384	1,552	296	88	860	400	85	298	66	11	1,384	556	120	577	101	30
Death rate.....	11.1	10.7	10.2	11.6	11.2	14.9	2.34	2.46	2.26	2.22	2.51	1.86	3.77	3.41	3.20	4.30	3.84	5.07
1919—Deaths.....	2,652	1,174	301	938	187	52	665	300	89	225	41	10	678	291	76	269	30	12
Death rate.....	6.9	6.9	7.6	6.7	6.6	8.4	1.73	1.77	2.25	1.60	1.46	1.61	1.76	1.71	1.92	1.92	1.07	1.93

	CONGENITAL.						DIARRHOEAL.						ALL OTHER CAUSES.					
	City.			Bx.			City.			Bx.			City.			Bx.		
	Man.	W.	Qu.	Man.	W.	Qu.	Man.	W.	Qu.	Man.	W.	Qu.	Man.	W.	Qu.	Man.	W.	Qu.
1918—Deaths.....	17	12	3	2	.....	.....	142	60	11	57	11	3	1,637	712	165	618	118	44
Death rate.....	.05	.07	.08	.02	.....	.....	.39	.37	.29	.42	.42	.51	4.52	4.37	4.40	4.61	4.48	7.43
1919—Deaths.....	10	8	2	.....	.....	.....	113	39	15	44	12	3	1,186	536	119	400	104	27
Death rate.....	.03	.05	.05	.....	.....	.....	.29	.23	.38	.31	.43	.48	3.09	3.16	3.00	2.85	3.70	4.34

	TOTAL DEATHS.						CONTAGIOUS.						RESPIRATORY.					
	City.			Bx.			City.			Bx.			City.			Bx.		
	Man.	W.	Qu.	Man.	W.	Qu.	Man.	W.	Qu.	Man.	W.	Qu.	Man.	W.	Qu.	Man.	W.	Qu.
1918—Deaths.....	21,019	9,403	2,069	7,646	1,445	456	2,325	1,150	222	742	179	32	6,347	2,810	533	2,499	403	102
Death rate.....	33.7	34.1	30.8	33.7	32.9	43.5	3.73	4.17	3.30	3.27	3.05	3.05	10.2	10.2	7.9	11.0	9.2	9.7
1919—Deaths.....	15,744	7,311	1,631	5,453	1,035	314	1,336	655	163	421	75	22	3,805	1,782	385	1,374	211	53
Death rate.....	24.7	26.0	24.1	23.5	22.7	29.4	2.10	2.33	2.41	1.82	1.65	2.06	6.0	6.3	5.7	5.9	4.6	4.9

	CONGENITAL.						DIARRHOEAL.						ALL OTHER CAUSES.					
	City.			Bx.			City.			Bx.			City.			Bx.		
	Man.	W.	Qu.	Man.	W.	Qu.	Man.	W.	Qu.	Man.	W.	Qu.	Man.	W.	Qu.	Man.	W.	Qu.
1918—Deaths.....	5,387	2,320	668	1,850	408	141	2,555	1,157	189	992	160	57	4,405	1,966	457	1,563	295	124
Death rate.....	8.63	8.41	9.94	8.17	9.28	13.4	4.09	4.19	2.81	4.38	3.64	5.44	7.06	7.13	6.80	6.90	6.71	11.8
1919—Deaths.....	4,886	2,157	573	1,689	353	114	2,474	1,145	187	910	171	61	3,243	1,572	323	1,059	225	64
Death rate.....	7.69	7.68	8.46	7.28	7.76	10.7	3.89	4.08	2.76	3.92	3.76	5.71	3.09	3.60	4.77	4.37	4.95	6.0



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TABLE II.  
BIRTHS REPORTED AND DEATHS UNDER ONE YEAR OF AGE FOR 1918 AND 1919—  
DEATH RATES UNDER ONE YEAR PER 1,000 BIRTHS REPORTED.

	1919.			1918.		
	Births.	Deaths Under 1 Year.	Death Rates per 1,000 Births.	Births.	Deaths Under 1 Year.	Death Rate per 1,000 Births.
Manhattan.....	56,546	4,928	87.2	59,434	5,710	96.1
Bronx.....	14,788	1,063	73.9	16,843	1,302	77.3
Brooklyn.....	47,526	3,679	77.4	49,508	4,179	90.4
Queens.....	8,966	715	79.7	9,518	884	92.9
Richmond.....	2,551	224	87.8	2,683	282	105.1
City.....	130,377	10,639	81.6	138,046	12,657	91.7

TABLE III.  
DEATHS FROM ALL CAUSES UNDER ONE YEAR OF AGE, 1917, 1918, 1919.

AGES.	MANHATTAN.			THE BRONX.			BROOKLYN.			QUEENS.			RICHMOND.			CITY.		
	1917.	1918.	1919.	1917.	1918.	1919.	1917.	1918.	1919.	1917.	1918.	1919.	1917.	1918.	1919.	1917.	1918.	1919.
Under 1 month.....	2,346	2,266	2,105	559	559	448	1,730	1,796	1,583	388	370	301	92	127	100	5,115	5,118	4,537
1 mo. and under 2 mos.....	2,551	2,584	2,460	78	78	69	350	337	225	81	58	51	15	14	16	1,098	1,091	821
2 mos. and under 3 mos.....	460	446	393	173	160	136	243	201	242	47	55	46	31	20	20	854	849	756
3 mos. and under 6 mos.....	1,075	1,040	993	128	128	136	663	663	612	129	116	104	63	54	61	2,123	2,003	1,906
6 mos. and under 9 mos.....	881	941	748	157	141	86	596	629	491	113	111	83	51	33	35	1,798	1,855	1,443
9 mos. and under 12 mos.....	809	807	658	124	141	79	528	639	308	87	113	49	32	41	22	1,580	1,741	1,176
Total under 1 year.....	6,122	6,084	5,359	1,175	1,114	878	4,142	4,347	3,521	845	823	634	284	289	247	12,568	12,657	10,636

TABLE IV.  
DEATHS FROM INFLUENZA AND PNEUMONIA FOR 1918 AND 1919 UNDER ONE YEAR AND UNDER FIVE YEARS.

	INFLUENZA.				BRONCHO PNEUMONIA.				LOBAR PNEUMONIA.			
	1919.		1918.		1919.		1918.		1919.		1918.	
	Under 1 Year.	Under 5 Years.	Under 1 Year.	Under 5 Years.	Under 1 Year.	Under 5 Years.	Under 1 Year.	Under 5 Years.	Under 1 Year.	Under 5 Years.	Under 1 Year.	Under 5 Years.
	73	201	171	565	602	1,035	780	1,486	226	510	379	988
Manhattan.....	18	52	32	130	141	246	157	308	45	102	74	198
Bronx.....	69	214	163	612	465	795	677	1,407	155	371	259	758
Brooklyn.....	16	60	40	124	98	143	121	256	17	42	39	113
Queens.....	5	14	24	65	21	33	24	50	7	17	13	44
Richmond.....												
City.....	181	541	430	1,496	1,330	2,256	1,759	3,517	450	1,012	764	2,101

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The Baby Health Stations have been the predominating agency of the Bureau, for the control of the morbidity and mortality of infancy and early childhood. In an effort to reduce infant mortality, two essential basic principles have been kept in mind: (a) the encouragement of maternal nursing; (b) efforts to secure the enrollment of babies as soon after birth as possible.

### (A) *Encouragement of Maternal Nursing.*

Throughout the year a continuous and persistent campaign of education on the value and importance of breast-feeding as a life-saving measure and as a means of increasing bodily resistance against inroads of disease has been fostered. During 1919, as in previous years, the majority of the infants enrolled at the Baby Health Stations were breast-fed exclusively or in part, and mothers who, upon admission, were inclined or desired to discontinue maternal nursing, or who had done so previously, were instructed in all matters bearing upon hygiene, diet, personal and home cleanliness, exercise and other related subjects, with a view to secure refunctioning breasts and a continuance or renewal of breast-feeding. No child was permitted to be artificially fed unless all measures for the maintenance of a supply of breast milk had been tried and found wanting. Success of this policy is shown by the following:

#### CITY OF NEW YORK.

#### *Infants Admitted to Baby Health Stations.*

Year.	Per Cent. Breast-fed Exclusively.	Per Cent. Breast-fed and Bottle-fed.	Per Cent. Bottle-fed.
1913.....	54.85	19.60	25.55
1914.....	62.47	17.21	20.32
1915.....	59.	18.	23.
1916.....	68.	14.	18.
1917.....	68.3	13.2	18.5
1918.....	67.	17.	16.
1919.....	66.9	17.	16.

In analyzing the character of feeding at the various stations as well as for the City and boroughs as a whole, it has been found that the highest percentage of babies breast-fed exclusively takes place among the Jewish and Italian clientele. Not only has an effort been made to increase maternal nursing at the Baby Health Stations, but as a means of increasing the number of available wet nurses in the City, the inspectors of the Bureau, when investigating the genuineness and cause of stillbirths reported by midwives, made careful inquiry of the mothers' willingness and ability to wet-nurse another baby, subject, of course, to all the necessary physical and blood examinations. These cases were filed at the department and a wet-nurse registry was gradually established. It must be stated, however, that the number of women so registered was comparatively few.

### (B) *Efforts to Secure Enrollment of Babies as Soon After Birth as Possible.*

The year 1919 lent corroboration to the statements of former years, as to the urgent need of reaching infants as soon after birth as possible, if any appreciable

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reduction in infant mortality is to be secured. The number of deaths under one year of age for 1919, grouped according to months, will be seen from one of the tables previously attached (Table No. 3). Out of a total of 10,639 infant deaths during the year, the following deaths took place during the various months of the first years:

## NEW YORK CITY.

Age.	Number of Deaths.	Percentage of Deaths During the First Year.
Under 1 month.....	4,537	42.7
1 to 2 months.....	821	7.7
2 to 3 months.....	756	7.1
3 to 6 months.....	1,906	17.9
6 to 9 months.....	1,443	13.6
9 to 12 months.....	1,176	11.0

In other words, over 40% of all deaths during the first year of life takes place during the first month of life, and over 50% during the first three month of life. To reduce infant mortality, therefore, to any great degree, it becomes necessary to reach the infant early—the sooner the better. The high percentage of infant deaths during the first month of life is intimately correlated to the supervision of the expectant mother, in that approximately 75% of deaths during the first month are due to congenital diseases. It is perfectly natural, therefore, that the Bureau should seek the enrollment of babies at the stations, as soon after birth as possible, and its campaign of pre-natal care and the co-operation of private agencies has resulted in an increased enrollment at the Baby Health Stations of infants under one month of age—from 2%, in 1914, to over 12%, in 1919, as follows:

## CITY OF NEW YORK.

### *Age of Infants Admitted to Baby Health Stations—Arranged by Percentage.*

Age	1915.	1916.	1917.	1918.	1919.
Under 1 month.....	11.66	13.50	11.75	11.	12.3
1 to 2 months.....	22.62	21.10	25.63	26.	26.3
2 to 3 months.....	20.91	17.20	18.28	18.	18.1
3 to 6 months.....	25.26	22.00	22.49	23.	22.
6 to 9 months.....	11.98	14.20	12.20	13.	12.3
9 to 12 months.....	7.57	12.00	9.65	9.	8.9

While the number of babies under one month of age enrolled at the Baby Health Stations increased somewhat during 1919, it is evident that additional effort must be made for the enrollment of a larger number of babies directly after birth. This is a phase of the work which merits the attention of all those interested in the control of infant mortality.

The popularity of the Baby Health Station service in the public eye is attested by the large enrollment from year to year, as follows:

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## CITY OF NEW YORK.

Year.	Number of Stations.	Number of Children Under 1 Year of Age Attending Stations During Year.	Number of Children 1 to 2 Years of Age Attending Stations During Year.	Number of Children Under 2 Years of Age Attending Stations During Year.
1911.....	15	5,006	2,146	7,152
1912.....	55	21,316	9,136	30,452
1913.....	56	26,350	11,293	37,643
1914.....	56	27,165	11,643	38,808
1915.....	59	37,197	8,865	46,062
1916.....	59	39,646	8,656	48,302
1917.....	59	41,496	5,569	47,165
1918.....	59	41,691	4,491	46,182
1919.....	60	39,304	6,571	45,875

The influence of the Baby Health Stations has shown itself in the improved general condition of the children on admission, greater personal and home hygiene and cleanliness, relatively fewer cases of mal-nutrition and disorders of digestion, a better and more intelligent response of parents to instruction and advice, and increased confidence in the nurse as a friendly visitor, a better knowledge on how to give "first aid" in illness, and an improved regularity in attendance. The increasing enrollment of a large number of babies from districts beyond the station confines, and of those who purchase their milk from other sources, bears testimony to the fact that the public have come to look upon the stations as educational centers or preventoria, rather than as milk depots. The patrons have realized more than ever that it is better and easier to look after the baby when well, and to keep it well, than to cure it after it is sick.

In some stations the enrollment has been exceptionally large, too large in fact to afford proper care and supervision. Baby Health Stations with an enrollment of from 500 to 700 babies, found it difficult to give each and every child the individual attention that is necessary. It has, therefore, been found advisable to modify the control of the station attendance, so as to produce the best result for the largest number, in that, instead of insisting upon regular attendance for all babies at least once a week, arrangements have been perfected so that they attend either bi-weekly, weekly, every two or three weeks, according as they are, very young, sick, weak, or delicate, breast-fed or artificially fed, or entirely well. A definite working schedule was formulated and cases were considered as active or inactive within their own group. By this means, baby health stations with an extremely large enrollment, have reduced the daily attendance of babies to within reasonable limitations, and the babies that needed attention most were given special consideration. Provision was also made to keep a watchful eye on babies that were sick, weak, delicate or suffering from mal-nutrition, and these cases were noted on the history card as "S" (sick) or "-" (minus) babies. In former years babies of this type, whose mothers refused to bring them regularly to the station without sufficient reason or warrant, were dropped from the rolls after every effort was made to keep them in regular attendance. At the present time this class of babies, whether enrolled at the station, or, when found on home visits, are kept under observation and followed up at home, where all necessary instruction and advice are given. In other words, a large number of frail babies, who formerly were not brought to the station, and who, therefore, failed to receive proper care, have been supervised. This is in line with the principle, that if Mahomet



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won't come to the mountain, the mountain must go to Mahomet. This, it seems, is a definite step forward in infant mortality control, and the sins or the ignorance of the parents are not permitted to react upon the infants. While it is appreciated that with a large number of this class of infants under supervision at the stations, the number of station infants deaths will increase, nevertheless, it is felt that a certain number of these babies would otherwise have died, and in this wise the general city infant morbidity and mortality were improved.

This policy was the outgrowth of years of experience in district or home visiting by nurses, during the summer months, where it was found that of the mothers and babies referred by them at the close of the summer, to the various baby health stations, only 3 to 6 per cent. took advantage of this opportunity and enrolled the babies at the stations.

That the public have come to look upon the Baby Health Stations as prophylactic centres or places designed for the purpose of keeping well babies well, was exemplified by the fact that during 1919, only 4.6 per cent. of all the babies enrolled were found to be suffering at the time of admission with gastro-enteritis, and only 12.1 per cent. of the children enrolled were found to be suffering from mal-nutrition.

*Milk Dispensed at Baby Health Stations*—Although the milk dispensed at the Baby Health Stations is considered, as aforementioned, the lesser part of the stations' usefulness and influence, the amount sold is necessarily large since it is dispensed not only to babies who must be artificially fed, but to nursing mothers, expectant mothers, older children suffering from mal-nutrition or other disorders, cases of pulmonary tuberculosis, convalescents from influenza or other general diseases, school children in the open-air classes, in fact, to anyone who presents certification from a duly accredited physician, or allied child-caring or social agency, to the effect, that in their opinion, the person making application is in need of milk and unable to pay the prevailing market price.

During 1919, 5,612,132 quarts of milk were sold as against 5,815,425 quarts in 1918, and 5,982,412 in 1917. There is a diminution therefore in the amount of milk sold at the Baby Health Stations for 1919. This diminution is seen in all of the boroughs, with the exception of The Bronx and Richmond, the increase in The Bronx being due to, in all likelihood, the opening of an additional station; the increase in Richmond being due to a far better service of the milk company than in recent years. This situation is shown in the following tabulation:

*Milk Sold (Quarts) at Baby Health Stations.*

Year	Manhattan	The Bronx	Brooklyn	Queens	Richmond	Total
1918.....	2,762,213	157,265	2,740,247	102,307	53,393	5,815,425
1919.....	2,653,465	189,870	2,612,284	101,209	55,304	5,612,132

It would seem at first glance as if the advance in the price of milk during the year as against former years would have caused a decided decrease in the amount of milk sold. The fact of the matter is, however, that as compared with the latter part of 1918, the price of milk as sold at the Baby Health Stations was practically the same, as follows:

*Selling Price of Milk at Baby Health Stations.*

1918—	1919—
January to October... 12-13½c. per qt.	January to April..... 15c. per qt.
October to December. 15-16 c. per qt.	April to July..... 14c. per qt.
	July to November..... 15c. per qt.
	November 23 to Decem- ber 31 ..... 16c. per qt.

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The diminution in the amount of milk dispensed at the Baby Health Stations during 1919, as against 1918, to the extent of over 200,000 quarts, is not accounted for altogether by the high price of milk. In the first place it must be remembered that in the early part of the year, when there was a controversy going on between the producers and distributors—the so-called milk strike—there were weeks when the amount of milk delivered to the baby health stations was considerably below that of its normal output. At one considerable period, only 47 per cent. of the normal delivery was made to the stations. Furthermore, it must be remembered that the registration at the Baby Health Stations during 1919 was slightly below that of 1918, and while this number approximates only 300, nevertheless, several hundred quarts a day for a year is quite an item.

In fact, the increase in the price of milk at the Baby Health Stations, which has of course, kept pace with the increase in price in the open market, and which practically doubled itself at the stations, as it has in the open market, from 8 cents per quart in October, 1916, to 16 cents per quart at the end of the year, has not in itself diminished the sale of milk at these stations. It seems as if the maintenance of the large sales at the stations may be accounted for as follows:

(1) The public have become educated to the fact that milk is not only an essential, vital and indispensable food for infants and growing children, but, even at the advanced price, is the most economical of foods, in that, ounce for ounce, at the price, it offers the largest amount of nourishment, health and vitality. The public have come to purchase milk in many cases to the exclusion of other less essential and less nourishing foods, particularly for infant and child consumption.

(2) The public have learned the economy of paying more for a safe, clean, pure milk, and have found that paying more for milk is cheaper than paying for illness or funerals.

(3) No matter what the market price of the grade of milk dispensed at the stations has been—Grade "A" pasteurized, bottled—the differential between the station and the open market price has always been at least 3 cents less; in fact, during one period of the year, the differential was 4 cents per quart, and for a short time, 5 cents per quart, the latter being the largest differential since the organization of the baby health stations. With from three to five cents saved to the public on each quart, the economic advantages accruing to the poorer element of the community, on the basis of almost six million quarts annually, is readily appreciated, and demonstrates how, when the market price goes beyond a certain limit, a large number of mothers who otherwise would purchase milk from delivery wagons, dairies, stores, etc., wend their way to the Baby Health Stations.

(4) Lowering the bars of the sale at the Baby Health Stations to those who in normal times could well afford to pay the market price, but to whom in these abnormal days, the prevailing market price worked a hardship.

Such falling off in the sale of milk at the Baby Health Stations as took place during 1919 did not appear due to any decreased consumption by the infants and young children. It has been previously noted, that milk is sold at these centres not only for infants and young children, but to older children and adults, under certain circumstances. It is well known that under natural conditions, milk at the baby health stations sells at a price within the means of these adults, that is to say from 10 to 12 cents per quart, or perhaps, 13 cents per quart, and that they purchase this milk at the baby health stations because of the desire to secure the best type of milk within their means, and secondly, because of the saving as against the market price, which, with the aforementioned station price, would usually be approximately 13 cents to 16 cents per quart, or perhaps a little more. In other words, 13 cents per quart, for the station type of milk, is about the limit of burden which these people can

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carry. With the price of milk during this year at the stations, ranging from 14 to 16 cents per quart, and the market price ranging from 18 to 20 cents per quart, for the same type of milk, it is very probable that many of these adults and older children at least, have sought the open market for their milk supply and have purchased for their consumption Grade "B," loose milk, which sold during the year in the stores from 11 to 13 cents per quart—a price more commensurate with their income. It may be that the aforementioned circumstance took place in the feeding of a certain amount of infants and young children, and that the slight increase in infant mortality from diarrhoeal diseases during 1919, the rate being 15.9 per thousand children born, as against 14.7 per thousand children born in 1918, may be accounted for by this fact.

The increased price of milk has an interesting psychological side to it, in the sense that while the public clamors loudly at an increase of 100 per cent. in the cost of so vital a necessity, it seems to take as a matter of course, an increase of 100 to 200 per cent. or more, in the price of less essential foods, wearing apparel, luxuries, etc. One thing is certain, milk is the infant's and poor man's food and nothing should be left undone to place at their disposal a full supply at the lowest possible price, consistent with genuine economic conditions. There seems to be a hitch, a kink, somewhere between the producer's price and amount the consumer is called upon to pay, and until some definite, reliable and fair legislation is enacted to provide for a liberal supply of milk to all at a reasonable price, the public will continue to pay.

In order to safeguard the quality of milk dispensed to the babies at the stations, every effort has been made by the bureau, acting in co-operation with the Bureau of Food and Drugs, to supervise its transportation and delivery to the end that the temperature of the milk was kept at or below 50 deg. F. from the time of delivery until it reached the home of the mother, and, that the bacterial count was not higher than that provided for in the rules and regulations governing the sale and distribution for this grade of milk, namely, 30,000 bacteria per c. c. To this end, periodic bacterial counts of samples have been made by the Bureau of Food and Drugs, and this bureau informed of the situation. Also, the milk was so supervised that it was well iced up to the time of delivery, and the companies delivering ice at the stations supervised to the extent that the necessary amount of ice was delivered for the refrigerators at each station. The temperature of the milk delivered was taken early every morning, by the nurse's assistant, and, any unusual rise in temperature was made the subject of special investigation. Rules of procedure governing the care of the milk at Baby Health Stations and the home, for nurses and nurses' assistants, were forwarded to each station.

While Grade "A" bottled milk has been the only type of milk dispensed at the stations since their organization (except of course, under the unusual circumstances of strike or difficulty in transportation, when for several days at a time Grade "B" milk would be delivered), there was so much public clamoring to the effect that families found it difficult to provide the necessary amount of milk at the prevailing market price, that the Department decided to try the experiment of offering for sale, at several of the baby health stations, in the afternoons, Grade "B" bottled milk at 15 cents per quart, the same selling in the open market at 18c. per quart, at the time. The object of this sale was an effort to assist the tenement population to reduce the cost of living, and to place at their disposal on the cash and carry basis, a good quality of milk, below the prevailing price. This experiment which was begun in the latter part of 1919, at nine stations in the Borough of Manhattan, seemed to offer some promise, so that within a comparatively short time the sale was extended to other stations in the Borough of Manhattan, and to stations of other boroughs. The sale of this milk was eventually conducted at all the stations of the Greater City, with

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three exceptions, the latter being due to conditions over which the Department had no control.

This sale was conducted in the afternoon, after the regular baby health service was completed, and special care was exercised of course, to see that the infants and young children continued to receive Grade "A" bottled, pasteurized milk, the type which is recommended for infant feeding.

As the result of publicity given by the department, to the relation of a plentiful supply of clean, wholesome milk to the nutrition of infants and growing children, and, to the existence of mal-nutrition on a comparatively large scale, among children of the City, a number of private citizens and commercial concerns, forwarded sums of money to the Department with the request that the same be used in furnishing milk free of cost to the children of those families, which the Department found sorely in need of this food.

In the early part of the year when the amount of available milk was low, a large number of communications were received by the bureau from the public, stating that the milk dealers failed to supply them with the necessary amount of milk for their infants and children. These cases were referred to the Bureau of Food and Drugs, and, in each instance, an acknowledgment of the letter was made directly to the writer, and a letter was forwarded to the milk concern specified, requesting that they make every effort to supply milk to the complainant. The bureau has held fast to its policy of dispensing milk in quart bottles, rather than in the form of prepared individual feedings. Formulae were regulated by the doctor-in-charge, to fit the individual child. Practical demonstrations of the prescribed formulae were given with special care, by the nurses at the stations, and in the home, and repeated until the nurse was convinced that the mother understood. No hard and set rules were outlined for the physicians in the artificial feeding of infants, except that two fundamental principles were insisted upon in their method of feeding; (1) to encourage, urge, and secure breast-feeding whenever possible; (2) to fit the formula to the individual needs of the child, as regards age, weight, development, digestive capacity, tolerance. For the most part simple dilutions of whole milk with the additoin of the various sugars were used. In difficult feeding cases, various food modifications and proportions were tried. Cases of mal-nutrition and marasmus, were given particular attention at the stations and in the homes, and effort was made in selected cases to have a neighbor nurse the baby or furnish expressed breast milk.

Unfortunately, the infant mortality rate is the only numerical valuation at present available, to show the the influence of the Baby Health Stations' service, and other educational propaganda of the bureau, although it is admitted on all sides that their effect on infant and child mortality is far greater, but alas not ascertainable. A true index of infant mortality control, is the reflection which this type of work has upon the mortality of later childhood—from 2 to 5 years, and under 5 years of age. That this situation was favorable for the year 1919, may be seen from the following tabulation:

### CITY OF NEW YORK.

#### MORTALITY RATES—2 TO 5 YEARS AND UNDER 5 YEARS OF AGE. DEATH RATE PER THOUSAND ESTIMATED POPULATION.

Year.	2 to 5 Years.	Under 5 Years.
1917.....	7.80	30.0
1918.....	11.1	23.7
1919.....	6.9	24.7



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It is therefore seen that the efforts of the bureau in the control of infancy and early childhood, during 1919, resulted in an infant mortality rate, and a mortality rate between 2 and 5 years, and under 5 years of age, which were the lowest ever recorded in the history of the city.

It has been customary in speaking of the infant mortality rate of the City of New York, to compare it with the other large cities of the United States. During 1917-1918, this rate for New York City compared most favorably with the other nine largest cities in the United States, in that for 1917 it was the lowest of the ten largest cities, St. Louis being first, and in 1918 it was the lowest of any of the ten largest cities in this country. During 1919, a similar situation obtained, and we find that New York City with an infant mortality of 81.6 shows the lowest rate of any of the ten largest cities in the country, with the exception of St. Louis, which recorded a rate of 75.2.

Below will be found two tables, one showing the infant mortality rates of the ten largest cities in the United States, for the year 1917-1918; the second showing the number of births, deaths and the infant death rate for the ten largest cities of the United States during 1919:

### INFANT MORTALITY RATES FOR THE TEN LARGEST CITIES IN THE UNITED STATES BASED ON 1,000 BIRTHS REPORTED

	1917.	1918.
New York City.....	88.8	91.7
St. Louis.....	79.6	94.4
Cleveland.....	100.0	97.74
Detroit.....	103.4	107.0
Boston.....	99.6	114.8
Buffalo.....	103.66	121.5
Pittsburgh.....	111.0	122.5
Philadelphia.....	111.0	123.9
Chicago.....	106.3	131.3
Baltimore.....	119.26	147.7

### INFANT DEATH RATES OF THE TEN LARGEST CITIES IN THE UNITED STATES, 1919.

	Births.	Deaths.	Infant Death Rate.
New York City.....	130,377	10,639	81.6
St. Louis.....	13,570	1,021	75.2
Cleveland.....	19,200	1,743	90.8
Detroit.....	25,377	2,460	96.8
Boston.....	18,735	1,814	96.8
Buffalo.....	12,708	1,396	109.8
Pittsburgh.....	14,307	1,656	115.3
Philadelphia.....	42,046	3,778	89.8
Chicago*.....	63,359	5,766	91.0*
Baltimore.....	17,631	1,711	97.0

\*Estimated only. Not willing to give out number of births, as they cannot enforce registration, on account of lack of funds.



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As stated, it has been customary to compare New York City with the other nine largest cities of the United States, and yet, a glance at table No. 2, will show that the comparison is hardly fair. New York City is practically in a class by itself, as far as birth registration is concerned. The number of births recorded for New York City during 1919, namely, 130,377, equals practically the sum total of births recorded in Philadelphia, Chicago and Detroit, namely 130,782. The comparison furthermore, hardly seems fair when one considers that the combined population of Chicago, Philadelphia, Detroit, and St. Louis, based on the estimated population of 1918, is about the same as that of New York City alone. If comparisons are to be made at all, it might be reasonable to classify the Borough of The Bronx with St. Louis, and the Borough of Brooklyn with Chicago. On this basis, we find that the Borough of Brooklyn, with an estimated population of about the same as Chicago, shows an infant mortality rate for 1919 of 77.4, as against 91 for Chicago; and the Borough of The Bronx, an infant mortality rate for 1919 of 73.9, as against 75.2 for St. Louis.

It is true that the reduction in some of the other larger cities of the United States during 1919 has been greater than that of New York City. It must be remembered, however, that during this year the conditions which prevailed in New York City were far more unusual than those in any of the ten largest cities in the United States, in that New York City was the clearing house for all conditions, which might have affected adversely the infant mortality rate—commercial, industrial, economical and military—and that this together with the large floating population in New York City during the war increased the attendant dangers of those factors which make for a rise in infant mortality. From whichever standpoint, therefore, we view the infant mortality situation in New York City during 1919, it must be admitted that the results both for the city as a whole and for the individual boroughs was most gratifying.

### *Studies—Surveys—Exhibits.*

In order to co-operate in the reduction of the diphtheria incidence among infants and young children, the Baby Health Station service assisted in performing Schick tests to determine the susceptibles and administered toxin-antitoxin injections, to the limit of their capacity. This work was performed at the various stations, particularly in the Boroughs of Manhattan and Brooklyn, by the field force of the bureau, in co-operation with representatives of the Bureau of Laboratories. Literature was distributed, talks were given by inspectors and nurses, parents were urged to have the children tested and injected, homes were visited, cases were secured, and a general educational drive, as to the effects of toxin-antitoxin as a preventive of diphtheria, was made. An endeavor was made to educate the public as to the harmlessness of the tests and to the great benefits which could be derived from the immunization, as a preventive measure against diphtheria, which shows its greatest incidence and mortality among children from 1 to 5 years of age.

While the number of injections and tests performed at the stations was not very large, the way was paved for a greater popularization of this procedure, which, it is expected will be taken up to a greater degree during 1920.

During 1918 this work was begun and extended in the Borough of Manhattan. During 1919, greater emphasis was given to this procedure in the Borough of Brooklyn. All in all, almost 1,500 children were "Schicked," and some 1,400 immunized.

More intensive surveys of Baby Health Station districts, with a view to securing the best available and most economical sites and quarters for the stations, were made, and special investigations were directed in this regard, to the locality factors of infant mortality, child population, prevailing nationality, intelligence of parents, housing,

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existence of child-caring agencies, as well as other city-owned or rented places in the district.

Education exhibits at the stations included panels on pre-natal care, colored panels on motherhood, panels on child-care, placards on clean milk, and a large number of educational placards, posters, leaflets and circulars, furnished by the Bureau of Public Health Education, as well as food bulletins and exhibits, and, literature on milk and other foods, employment, Americanization, etc. Not only were these exhibits placed within the stations, but the windows of the stations were used for advertising purposes, so to say, so that those "who ran by the stations, may read."

During 1919, there was a slight increase in the infant mortality rate from diarrhoeal diseases, the rate for 1919 being 15.9, and for 1918 14.7. Compared, however, with former years, the rate for 1919 is most gratifying, the rates for more recent years being as follows:

*Infant Mortality Rates, Diarrhoeal Diseases, City of New York.*

Year	Rate
1917.....	19.1
1916.....	17.7
1915.....	22.5
1914.....	21.0
1913.....	22.5
1912.....	25.0

This increase during 1919 led the bureau to make a survey in order to determine the relation between the character of the feeding and infant deaths from diarrhoeal diseases. It has been the observation of the bureau for a great many years, that infants breast-fed exclusively were less likely to succumb to diarrhoeal diseases than those artificially fed, and the result of the study corroborated this long observation. All in all, the history of 1,065 infants, who died during the months of May, June, July and August, 1919, in which reliable information could be secured as to the character of the feeding before death, were studied and tabulated, with the following results:

Character of Feeding.	No. of Cases	Percentage of Deaths.
Breast-fed only.....	178	16.7
Breast and bottle.....	154	14.4
Breast and other.....	67	6.3
Breast and loose.....	11	1.0
Bottle only.....	286	26.9
Bottle and other.....	221	20.7
Bottle and loose.....	10	1.0
Loose.....	22	2.1
Loose and other.....	25	2.4
Other.....	91	8.5

In order to determine the possible relationship between the increasing prices of milk during the year, and the health and nutrition of infants and children, as regards the quantity and quality of milk used, the substitution of less desirable articles of

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food for feeding, the ability of parents to purchase milk at the advanced prices, and the classes and nationalities most affected, two surveys were made.

The first survey was conducted by the nurses attached to the Bureaus of Child Hygiene and Preventable Diseases; areas representative of congested districts in the City were chosen in each borough. The results of the first survey follow:

The first survey was ordered by the Commissioner of Health, Dr. Royal S. Copeland, to aid the Special Committee on the Price of Milk, appointed by Governor Smith, in procuring first hand and up-to-date facts as to the quantity and quality of milk used in the city, its increase in price, the substitution of other articles of food for it in the feeding of young children, the ability of parents to purchase milk at the advanced prices, the classes of the community most affected, and above all the effects of the deprivation of necessary food upon the health of the children of the city.

The survey was based on an investigation made by the public health nurses attached to the Bureaus of Child Hygiene and Preventable Diseases, and areas, representative of the congested district of the city, were chosen in each borough that would reflect the actual conditions affecting the various phases of the problem.

The nurses engaged in this work were instructed to visit individually each family in the area assigned to them, to interview the mother of the family, and to note the physical condition of the children.

There were 11,007 families visited and reported on, divided as follows:

Borough of Manhattan.....	4,600
Borough of The Bronx .....	2,056
Borough of Brooklyn.....	3,395
Borough of Queens .....	467
Borough of Richmond .....	489

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Total families visited ..... 11,007

All children between the ages of one and seven years were examined, their physical condition and the nativity of the mother entered on the blank form prepared for that purpose. In addition to this the following items called for on the blank forms were gathered and tabulated as shown in the accompanying tables; number of cups of milk used, number of cups of coffee, tea, and cocoa entering into the diet; lessened quantity of whole milk used, expressed in quarts; increased quantity of condensed milk used, expressed in cans; number of families in which children were deprived of milk by reason of increased cost of same; number of children suffering from deprivation of milk; effect of lessened use of milk upon the physical condition of the children, as shown in number of children suffering from malnutrition, anaemia, underweight, and other physical defects; quantity and nature of substitutes used, and increased price of milk, arranged by grades, in September, 1919, as compared with September, 1916, from which latter date the price of milk advanced.

The number of children in the 11,007 families visited was 19,037, arranged according to age groups as follows:

1-2 years .....	3,052
2-3 years .....	3,647
3-4 years .....	3,579
4-5 years .....	3,556
5-7 years .....	5,203

The fewer number of children at one year of age, as compared with the succeeding ages, is entirely at variance with the normal experience as shown in census enumerations, and previous tabulations, and is contrary to calculations, estimates, etc., made in previous years. This decreased number of children of one year of age is explainable by the decreased birth rate of the years 1917 and 1918, as a result of the entrance of this

## ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

country into the war—the decreased marriage rate of 1917 affecting the birth rate of 1918. This reduction in the number of children under one year of age, as compared with those two years of age, was found to have occurred in all the boroughs of the city, with the exception of the Borough of The Bronx.

There were 40,573 cups of milk used daily by 19,037 children, or two cups and one ounce of milk for each child *daily*, an amount totally inadequate at each of the individual ages, but markedly so at the ages of one and two years; milk is the blood of children at these ages, and whosoever deprives them of this sustenance for financial or other reasons should feel the full hand of the law, if such can be placed upon him, and, if not, the execration of his fellow men.

We find that children of American mothers received daily two cups and three ounces of milk; of Italian mothers one cup and six ounces; of Russian mothers, two cups and four ounces; of Austro-Hungarian mothers, two cups and three ounces; of German and Irish mothers, two cups and six ounces.

Viewed from the point of individual boroughs, the amount of milk per capita was approximately the same.

The number of cups of coffee, given daily to the children in the 11,007 families, was 12,439; and of tea, 7,438 cups. It is evident that approximately two cups of tea or coffee are given, on the average, to each child. When it is understood that coffee and tea are stimulants, without any appreciable value as nutriment, it is realized that both should be tabooed in child life, and the conclusion is irresistible that malnutrition and all the evils attendant thereto must prevail among children fed on such material.

The tables show that in 10,793 families substitutes in the form of tea, coffee, cocoa, cereals, and other drinks were used, that is to say, in over 98 per cent. of the homes investigated, this dangerous practice was in vogue. Some mothers through ignorance of food values, adopt this baneful practice, and many mothers who know better are compelled by reason of the high cost of milk to seek these deleterious substitutes.

In 7,219 instances, less milk was bought, according to statements of the mother; more condensed milk was used in 1,017 families. Mothers, to the number of 5,775, claimed that children were deprived of milk by reason of high cost of the same, and 4,053 children were found to be using less milk.

The examination by the nurses showed the following prevalence of nutritional disorders among the children. This is the most interesting and important disclosure of the survey. There were 1,294 children found suffering from definite malnutrition; 993 children from anaemia; 785 children were found to be under normal weight; 608 children suffered from other disorders; and 3,648 were found to be undernourished.

In 1916 there were brought daily 1,028 quarts of Grade "A" milk, bottled, at an average price of 13 cents, while in 1919 there were only 515 quarts bought daily at a price of 18.6 cents per quart—that is, the amount of this grade of milk purchased *decreased* fifty per cent., the price increasing 43 per cent.

Grade "A" loose, bought in rare instances, was sold in 1916 at 9 cents and in 1919 at 18 cents, an increase of 100 per cent., the amount used decreasing only slightly. Grade "B," bottled, was paid for in 1916 at a price of 10.8 cents, the amount in daily use being 1,100 quarts, as compared with a price of 16.5 cents and a daily amount of 801 quarts, the increase of price being 50 per cent. and the *decrease* in amount 27 per cent. Grade "B" loose could be had, in 1916, at 8.9 cents per quart, at which price 2,045 quarts were bought daily, as compared with a price of 12.3 cents and an amount of 2,534 quarts daily, an increase in price of 38 per cent., and an *increase* in daily amount of 24 per cent. The price of condensed milk rose from 10.4 cents, in 1916, to 18.5 cents, in 1919, an increase of 78 per cent., the amount used (relatively small), doubling in 1919.



DEPARTMENT OF HEALTH—CITY OF NEW YORK.  
NUTRITION SURVEY—CHILDREN UNDER SIX YEARS OF AGE.  
FAMILY HISTORY SHEET.

BUREAU OF CHILD HYGIENE.

BUREAU OF PREVENTABLE DISEASES

Character of Neighborhood—Good—Fair—Poor

Number of Children in Family.	Age.	Sex.	Color.	Nativity of Mother.	Amount of Milk Consumed Daily.		Amount of Tea or Coffee.		Apparent Social and Economic Condition of Family.			Is Child Under-nourished.		Degree of Nutrition.				Signs of Malnutrition.	Cause of Malnutrition.	Apparent Reason for Insufficient Supply of Milk.	
					Cups.	Glasses.	Cups.	Glasses.	Good.	Fair.	Poor.	(Yes.)	(No.)	1	2	3	4				
1																					
2																					
3																					
4																					
5																					
6																					
7																					

Borough.....Street.....Number of House.....

Date.....

(Signed).....Inspector.



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The second survey was somewhat along similar lines to the first, except that it embraced a younger age group, namely, children under six years of age, and entered into the apparent social and economic condition of the family as well as the degree of nutrition and other factors; a copy of the form used in this survey is hereto affixed.

### *General Co-operation in the Work.*

Conditions following the war, and the unstable economic conditions, resulted in a more interested co-operation from many sources, all of which resulted in bringing much comfort and material relief to many needy and deserving families. This co-operation included, among the many, the Mayor's Committee of Women on National Defense, allied city departments, the Mayor's Ice Committee, the Women's Auxiliary of the Baby Health Stations, charitable, philanthropic and social service agencies, hospitals, St. John's Guild, Salvation Army, Red Cross, Young Women's Christian Association, Christ Child's Society, After-Care Circle, the Wholesale Ice Company, Herald Ice Fund, newspapers in English and foreign languages, Babies' Welfare Association, Teachers' College, Pratt Institute, New York Child Welfare Committee, maternity centres, Red Stocking Committee of Brooklyn, Social Service Exchange, neighborhood associations, Elks, guilds, theatres, etc.

As the result of the establishment by the Mayor of a large number of ice distributing stations in the various boroughs, many needy families were enabled to secure ice free of cost. This co-operation, in addition to the usual amount of ice distributed by the Wholesale Ice Company, and the Herald Ice Fund, through the Babies' Welfare Association, did much to assist in the control of infant life. The free excursions during the summer, organized by the Mayor's Committee of Women on National Defense, provided for daily excursions for a long time for mothers and babies of the poor.

The Clover Farms Company, the milk distributing concern for the Baby Health Stations, co-operated in several ways, particularly by their willingness to make official certain rules and regulations suggested by the Bureau, whereby the dispensers of milk at the stations would sell the milk with a minimum amount of confusion and misunderstanding, and whereby the drivers would exercise greater care in the delivery of milk, and in placing the same in refrigerators at the stations. These rules and regulations were printed by the Clover Farms Company and posted in the various stations of the Greater City.

In endeavoring to popularize the use of milk as a food for infants and children and to increase its family consumption, the Bureau co-operated with the Children's Milk Week Committee. This Milk Week was celebrated from April 21 to April 27, 1919, at the 71st Regiment Armory, and the Bureau took advantage of this opportunity to emphasize the need and importance of proper nutrition and other care in infancy and early childhood. With this object in view, a baby and child contest was conducted in all of the boroughs of the Greater City. Eighty-five centres, comprising all the Baby Health Stations of the department and many Baby Health Stations of allied child-caring agencies were included in this contest. Unlike other contests, this was not a mere baby show, but included children of pre-school age. Special score cards were prepared, one for children under two years of age, and one for children from two to six years of age, and physical examinations were made of the better babies at each of these centers, in order to establish the best at each one of these centres. The primary examinations were conducted by the medical inspectors of the Bureau; the various boroughs were zoned into districts, and as a result of a process of elimination, the best district and borough baby, and the best district and borough pre-school age child, and finally the best city baby and the best city pre-school age child were decided upon. The final determination of the best borough

## BUREAU OF CHILD HYGIENE

and city baby and pre-school age children, was made by a special advisory committee, consisting of prominent pediatricians of the Greater City. Provision was made for the distribution of money prizes and medals. The best city baby and the best city pre-school age child, received the Mayor's gold medal, a letter of congratulation from the Commissioner of Health, and a fifty-dollar victory bond. East best borough baby and best borough pre-school age child was given a silver medal, a twenty-dollar gold piece and a letter of congratulation, signed by the Commissioner of Health, and each of the twenty best district babies and best pre-school age children, was given a five-dollar gold piece, a silver medal and a letter signed by the Commissioner, and finally, each of the best Baby Health Station babies and pre-school age children was given a medal and a letter signed by the Commissioner of Health. The bureau had a large booth at the exhibit, at which babies and children were weighed and given small tags, on one side of which was noted the weight and height of the baby or child, together with the normal weight and height for its age; and on the reverse side there was a statement emphasizing the value of milk as a food. Nurses and doctors were in attendance daily. The exhibit contained a large number of photographs, pictures and a large amount of educational literature was distributed.

The distribution of prizes to the city, borough and district winners took place at the exhibit on different days of the week, and each day was known as the respective borough day. The presentation of the medals, bonds and gold pieces was made by the Commissioner of Health.

The value of Baby Health Stations as educational factors in the Greater City was further emphasized by the establishment of several additional Baby Health Stations maintained by allied child-caring agencies, namely, The Greenwich House, The Master School, and the Henry Street Nurses' Settlement.

The educational advantages of Baby Health Stations was further emphasized in the Borough of Queens, where, because of a limited number of stations and the large distances that it is necessary to travel, five temporary Baby Health Stations were established during the summer months, at public schools and at the branch offices of the Health Department. These temporary Baby Health Stations were supported this year, as in former years, largely through voluntary contributions of mothers' clubs associated with the schools, and arrangements were made with a local concern to supply a high grade of milk for infant and child-feeding, at a cost below the prevailing market price.

All of the aforementioned shows that child care is no longer to be considered an individual problem nor the problem of a municipal health department alone. It is now a community problem or a close business partnership of all agencies and individuals interested in child welfare. Such results as are being attained in this City can come about only through a well-organized, co-ordinated and correlated effort on the part of all agencies interested in infants and children, with the health department acting as a clearing house. The control of infant and child morbidity and mortality is more of a socio-economic than a medical problem. Naturally, social service work has always been with us, and probably always will be. It has taken some time to arrive, but, it is here, and will never in all likelihood be relegated to the rear. Its importance and significance during 1919 was more evident than ever, and every available source and channel for securing relief has been searched and used by the medical and nursing staff of this bureau, in their effort to secure as much material aid, relief and comfort, as was necessary for the needy and deserving families which came under their jurisdiction.

While individual instruction is the aim of the Baby Health Station service, it has been found expedient at times, to hold various classes for mothers, where general

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instruction in preventive health measures can be given. This year, as in former years, classes on the prevention of respiratory diseases, cooking classes, and sewing classes have been held.

The fact that respiratory diseases have assumed second place in the infant mortality statistics, has demonstrated the need of instruction in preventive measures. While it is true that the prevalence of respiratory diseases of infancy was unusually low in the early part of the year, nevertheless, it was considered advisable to continue these classes. This program justified itself because toward the latter part of the year an increase in respiratory diseases took place. Instruction was given on all factors which were likely to increase respiratory diseases, such as the importance of ventilation, the dangers of overcrowding, of coughing, sneezing, spitting, kissing, etc.; the use of separate eating utensils, towels, tooth brushes, etc.; the importance of oral and nasal hygiene, the care of the teeth, the dangers of hand to mouth infection, the isolation of all children and adults with coughs and cold, etc.

Cooking classes, by the nurses or by trained dietitians from various co-operative agencies, such as Teachers' College, Pratt Institute, the Association for Improving the Condition of the Poor, were held regularly, in order to educate mothers in the proper and most economical methods of purchase, preparation, care and palatability of food. The economic conditions of the day, rendered it necessary and important to show the tenement population how to spend their money most advantageously and profitably. These classes laid particular stress upon the fact that milk was a food and not a beverage, that it has a high nutritive value and that there were many ways in which it could be prepared to suit the taste as well as the food habits of the different nationalities.

Sewing classes were conducted mainly for expectant mothers, and demonstration on how to prepare at a small price articles for the new arrival and for the confinement, were held at regular intervals. These classes not only proved of material advantage to the mothers, but the gatherings afforded them a certain amount of social intercourse which relieved the monotony of their daily life, and gave them a healthier mental attitude, which is so essential during pregnancy. In many instances, the material used at these classes were furnished free of cost, by one or another of the co-operative agencies, or by private individuals, frequently through the efforts of the nurse in charge, so that a decided saving for many mothers was effected.

Classes in corrective exercises were also held through the courtesy of the Peoples' University Extension Society, this organization furnishing an instructor to several of the stations. These classes were open to all the older children of the neighborhood, who suffered from muscular relaxation of faulty posture and carriage, resulting in round shoulders, spinal curvature or other orthopedic defects. These classes were all well attended, some of the members having been in attendance for several years past.

*Baby Health Stations as Centres for Other Departmental and Local Social Service Activities*—Other departmental and local activities have centered around the Baby Health Stations, this year as in other years. They have come to be recognized as community for neighborhood centres, to which most of the inhabitants of the vicinity come for advice and instruction, that relate to the family as a unit. In the early part of the year they were used for the sale of eggs, at a price below that of open market, the eggs being delivered by the Department of Public Markets, the same being conducted by the nurses of the stations, and open to all who desired to purchase. While this sale was surrounded with numerous difficulties, annoyances and irregularities, and while it interfered with the regular station service and routine, it served a purpose, by placing in the hands of the needy public, a valuable article of diet at a reasonable price.

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Vaccinations have been performed at the stations the year round. Midwives, and mothers' meetings of various kinds have been held; Little Mothers' Leagues have met there at regular intervals; groups of high school girls have been given practical instruction in the care of the baby, and food preparation. Various child-caring, social service, philanthropic, and other agencies, as well as maternity centres, have been afforded desk room. Baby Health Station and social workers, doctors, nurses and other workers, from all parts of the world, have been instructed in the station activities and service. Local baby improvement contests have been held, and every facility has been offered the various municipal, state and National representatives, in furthering work of all kinds, which makes for the health and well-being of the family. In a word, all efforts for unifying the care of infants and children have been grouped and developed around the stations.

That the work performed at the Baby Health Stations, is recognized to be of a standard worthy of emulation, is exemplified by the fact that visitors from all parts of the world have come to them in order to study their methods. It is no exaggeration to say that there was scarcely a progressive community or country that did not send some representative to the Baby Health Stations during the year. Thus we find representatives from Poland, Australia, Japan, England, France, Havana, China, Canada, Texas, Washington, California, Kentucky, Oklahoma, Ohio, Michigan, Pennsylvania, Jersey, etc., etc.

### *Little Mothers' Leagues.*

The Little Mothers' Leagues, which are organizations composed of school girls twelve years of age and over, have been part of the bureau organization for over ten years, and have been established and conducted in many of the public and a few of the parochial schools. As such, they are largely summer month institutions. The need for conducting these leagues the year round has long been felt by the bureau, and such organization has been effected at the baby health stations, and many of them have had a Little Mothers' League for the past several years.

The school leagues, in many cases, meet at the stations during the summer and then become incorporated with the permanent Baby Health Station leagues. During the year thousands of school girls come under the educational influence of inspectors and nurses of the bureau, through these leagues, and as a result thereof, not only carry daily lessons of child care, hygiene and sanitation into the homes, but take better care of their baby sisters and brothers, to say nothing of becoming better prepared for the exacting duties of motherhood.

Many of these leagues have formed cooking classes, in addition to their regular program, and, as in the case of cooking classes held for their mothers, the members have been taught by the nurses of the bureau and by expert dietitians from allied co-operative agencies, in the proper purchase, preparation, care, nutritive value, palatability, etc., of various food articles. They have served also as a wedge for the furtherance of the Americanization program of the National Government, and have proved gratifyingly responsive in work relative to after-war needs.

These leagues organized for the most part in the poorer sections of the city, where the need for help by mothers seems most urgent, naturally consist mostly of children of foreign-born parentage. The membership of most of the leagues consists of children whose parents have been born in many of the foreign countries. During the year sufficient interest was aroused in one of the Baby Health Stations near the Chinese section of the city to organize a league consisting of Chinese children, who responded most willingly and most interestingly to the instruction given by the nurse-in-charge.



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The membership of the Little Mothers' Leagues of the public and parochial schools, and of the Baby Health Stations, totals about fifteen thousand (15,000) annually. With these leagues in existence for over ten years, it can readily be appreciated what a potent force this organization has had over the control of infant mortality in this city. These girls are very responsive to instruction and have acted as missionaries of education, not only for their own family, but for many of the families in the neighborhood. And, furthermore, they not only carry this education into the homes, but are sufficiently interested in the practical side of their work to gather funds through their own resources and to apply the same to the needs of some worthy baby or babies, particularly for the purchase of milk. It is no exaggeration to say that a large part of the reduction in infant mortality, which has taken place in the city during recent years, is due to the accumulative education of the "Little Mothers" of the Greater City.

### *District or Home Visiting Control of Infant Mortality by a Corps of Field Nurses.*

During the months of July and August, and part of September, the supervision of infant life is supplemented by the assignment of an augmented force of nurses from the Division of School Medical Inspection, in addition to the regular work conducted through the baby health stations. During this heated period, school nurses are assigned to special districts of the city, in which analysis has shown either a high infant mortality rate or a large infant population. Each nurse is held responsible for the enrollment, supervision, care and follow-up of 150 infants in her respective district and in the event of removal, death or refusal to accept service, she is held responsible for making up the original complement of 150 by a canvass of the neighborhood.

Visits are made to these infants according to the needs of the situation, to well babies at least once every week or ten days, and to sick, delicate or frail infants, as frequently as necessary. These "district nurses," as they are called, make their headquarters in most cases at adjoining Baby Health Stations, and conferences are held daily with the medical inspectors, who visit the homes of sick and sub-normal infants, and prescribe all necessary treatment and advice for cases of gastro-intestinal disorders or diseases of nutrition. First-aid or emergent treatment is given in all cases ill with other diseases, and then every effort made to see that the baby receives subsequent care at the hands of private physicians, hospitals or dispensaries.

The volume of work performed in this direction, during 1919, was somewhat lower than in former years, due to the fact that provision was only made in the 1919 budget for the assignment of 87 months' of temporary nursing service, as against 285 months in former years. This circumstance necessitated the assignment of many school nurses to the Baby Health Stations to fill in the vacancies of the regular baby Health Station nurses, whereas in former years this work was undertaken by the nurses temporarily assigned during the summer months.

At the expiration of the summer the babies under district supervision were referred by card to the neighboring Baby Health Station for a continuance course of advice and the mothers were urged to attend regularly. Unfortunately, only a very small per cent. of these mothers—6 per cent.—subsequently took advantage of the station opportunity. The small per cent. of mothers, who, during the summer receive advice and instruction from the district nurses, and subsequently enroll their babies at the station, has become common observation for many years. Irrespective of how many Baby Health Stations are maintained by the Department, there will always be a large number of mothers who will refuse to bring their babies to these centres, either because of indifference, neglect, or carelessness, and who cannot be reached



## BUREAU OF CHILD HYGIENE

through the stations because of a limited working force; and it is sadly true that very often babies who need care most never reach the station because of this indifference or neglect on the part of the mother. A combination, therefore, of Baby Health Station service for the year round, and home visits during the summer months, has proved of distinct usefulness. Such babies found during the summer, who are frail, delicate, or poorly nourished, are followed up by the Baby Health Station nurse, whether or not the mother enrolls the baby at the health station.

Infant mortality control during the summer months, through home or "district visits," has been conducted by the bureau since 1911. The number of babies supervised in the homes, during the summer months, by this corps of nurses, ranged between fourteen thousand and sixteen thousand, from 1911-1919 inclusive. The number of babies under one year of age so supervised during these years was 156,567. It is evident that this method of procedure, which is preventive rather than corrective, is no small contribution to the control of infant mortality in this city.

### *Physical Examination of Children of Pre-School Age.*

For many years the bureau has recognized that there existed a gap in its administration of child hygiene activities, between the baby health station child and the school child. This gap is the proper supervision of children of pre-school age, 2 to 6 years. The pre-school age is one of the most neglected periods of childhood. Ample provision has been made for the control of infant mortality and for the supervision of the school child, and commendable results have been accomplished in both directions. The pre-natal and the pre-school age periods are the two weak links in the chain forged about the control of child life. The pre-natal period bears the same relation to the infant that the pre-school age bears to the school child. Just as the best time to take care of the health of an infant is before it is born, just so the best time to take care of the health of the school child is before it enters school, rather than after. With the neglect of either the pre-natal period or the pre-school age, the continuity of successful control of child life will be interrupted.

The Baby Health Stations, established and maintained primarily for the care and feeding of babies under two years of age, have not lent themselves under the present system of organization to any extended supervision of children of the pre-school age, for several reasons, namely—because of the increased volume and scope of infant and early childhood care, necessitating a corresponding increase of time and energy, on the part of the limited medical and nursing force; because mothers seem to have all they can do to look after the baby or babies that are brought to the stations, without the added burden of bringing children of the pre-school age to these centres; and because of the insufficient force of medical inspectors to conduct this work after the regular baby health station hours. While the bureau recognizes the importance of this work, comparatively few examinations were made at the stations during 1919. Sufficient data, however, has been compiled from a study of the examination made in recent years to justify the recommendation that this type of work should be extended by the municipality. The percentage of mal-nutrition among children of the pre-school age is larger as a rule than that among children of the public schools, and other physical defects are quite as common, and in some instances more so. The studies of recent years have indicated the extreme importance of these examinations and the influence which proper correction of physical defects at this age period would have upon the educable capacity and school progress of the child. Physical examination and follow-up work of children of the pre-school age is one of the most pressing public health problems of the present, and one of enormous magnitude, when it is remembered that the estimated population in the City of New York of children from 2 to 6 years of age is almost 500,000, and that this is about one-half of the estimated

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school population. When it is remembered, furthermore, that the entire working medical force of the division of School Medical Inspection examines approximately 300,000 school children annually, it is easily appreciated what a large working medical force would be necessary in order to make any definite impression upon the status of children of the pre-school age. In fact, the problem is so big that it is one for the community to undertake, rather than for the Health Department alone, and, if this problem is ever to be solved, ways and means for these examinations at various centers, such as schools, hospitals, dispensaries, settlements, guilds, clinics, day nurseries, baby health stations, etc., will have to be devised, or the public will have to be educated up to the necessity of having these children examined periodically by private physicians.

To sum up, then, while the volume of work performed was slightly below that of last year, essentially because of conditions associated with the war, diversion of the field force because of influenza, special surveys and other studies and a social unrest, the character of the work was maintained at a high standard, there was a betterment on the part of the employees in the general condition and scope of the various activities, a better, more sympathetic and more whole-hearted degree of co-operation on the part of allied agencies, a more earnest view of the clientele, as to the objects and purposes of the stations, and a fine spirit of willingness, earnestness and loyalty on the part of the employees, during the trying days of 1919.

### *School Medical Inspection.*

During the year a list of children from families in which there was a case of tuberculosis has been regularly furnished to the Bureau of Child Hygiene, by the Bureau of Preventable Diseases, and every effort has been made to place the children of these families in an open-air class, when there was a school with such a class sufficiently near.

Every effort was made to prevent a recrudescence of influenza cases among school children. Five hundred thousand (500,000) circulars on the prevention of colds and influenza were distributed. During February and March every Friday was devoted by medical inspectors to the examination of pre-school-age children. This led to the detection of a number of defects among these children and every effort was made by the inspector and nurse to have them corrected.

The retirement of one supervising inspector on March 1, from the Borough of Manhattan service, led to the doubling up of supervision upon two full-time men, and the work was carried on by these two men throughout the year. On account of the dropping of a number of inspectors, through lack of budget appropriation, the schools were regrouped, in order to cover all schools as fully as possible.

A list of schools in which there were a number of poor families, and where the degree of malnutrition was high, was submitted to the Chief of the Division of School Inspection, in order, if possible, that milk might be furnished to the children therein. A special nutrition survey was made in forty-three (43) schools, and there were found of the

No. 1 cases.....	9,636
No. 2 cases.....	38,493
No. 3 cases.....	17,571
No. 4 cases.....	4,884

with a percentage ranging from 17 to 61 of malnutrition, and a general average of 32%.

No. 1 Case—Represents children in excellent condition.

No. 2 Case—The average normal child.

No. 3 Case—Those requiring supervision for malnutrition.

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No. 4 Case—Those with organic trouble, or otherwise requiring medical care for the malnutrition from which they are suffering.

The results by ages, show that there were, in the

Kindergarten .....	40% malnutrition
1st year .....	43% malnutrition
2d year .....	40% malnutrition
3d year .....	37% malnutrition
4th year .....	37% malnutrition
5th year .....	35% malnutrition
6th year .....	32% malnutrition
7th year .....	26% malnutrition
8th year .....	22% malnutrition
9th year .....	21% malnutrition

A survey to determine the relation of the high cost of milk to its decreased use, and, consequent under-nourishment of young children, was instituted. Some ten thousand (10,000) families, were visited by inspectors of the Department, in selected sections. Families where there were one or more children between the ages of one and six were chosen. The survey was instituted to show how much milk of the various grades is used at the present time in comparison to 1916, before the increase in price, and also, whether any of the children of this age-group, are suffering from malnutrition, owing to the use of less milk.

A number of visitors from all over the world have inspected the school work during the course of the year and have written various letters to the Director and others, showing their appreciation of the work and its value.

New physical record cards were placed in many of the schools, and the inspectors and nurses were advised to use these as much as possible in their examination of the children, so as to save the loss of a large number of previous examinations through destruction of the old card, without its having been properly copied.

During the course of the year it was reported that an increase in the number of cases of scabies had occurred. This was found to be so to a certain extent. It was believed, but not thoroughly demonstrated, that the cases had been caused by a large number of returned soldiers from abroad, who suffered with mild types of the disease.

A large amount of social service work was done by the nurses throughout the year in taking care of families in their districts. All nurses became particularly active around Thanksgiving and Christmas time, providing suitable cheer in the way of good food and proper clothing for worthy families.

There was a notable increase in the number of cases of measles during the last quarter of the year. Every effort was made to see that the teachers sent down to the nurse and inspector, cases showing initial symptoms of the disease. Rooms in which two or more cases occurred were thoroughly scrubbed and aired, as a possible aid in the prevention of more cases, and such classes were routined regularly for a period of two weeks, in order to note early symptoms in other children and exclude them.

Chickenpox and diphtheria also showed an increase, but careful watching seemed to reduce rapidly the number of infections from these.

### *General Contagious Diseases Found in Schools and Excluded.*

There were found in the schools and excluded during the year 1919, 1,846 cases of general contagious diseases; this is 149 more than for 1918, when there were 1,697. Every effort was made to detect contagion in its early stages, so as to place the child under observation of a physician as soon as possible, and to obviate the loss of a larger number of school days than is absolutely necessary. To facilitate this work,

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teachers were from time to time instructed by medical inspectors and nurses in the signs and symptoms of contagious diseases, and urged to send to the nurse or doctor as soon as they noticed any child who did not appear to be entirely normal. The number of cases excluded from school is rapidly falling off, and it is felt that this co-operation of the teacher, nurse and doctor has a great deal to do with it.

The reported "Cases of Major Contagious Diseases Found at Home" have fallen off because the parents are learning to know that, while the teacher is anxious to keep up her attendance, absence for a contagious disease will not count against her class. Most of them now also realize that the reporting of a case does not mean its removal to a hospital, and understand that it is safer for all concerned that cases should be reported, so that quarantine can be established, rather than to leave them alone and to serve as a source of infection in the neighborhood. There were found on "home visit" only 95 unreported cases of major contagious diseases during 1919, while in 1918 there were 368.

### *Contagious Eye and Skin Diseases Found in Schools.*

There is an apparent increase in contagious eye and skin diseases found in schools. In 1919 there were 237,437, and in 1918 there were 209,991. This is due to the fact that at the first sign of any minor contagion or eye trouble, most teachers to-day send the child to the nurse who promptly institutes treatment, or sends it to a suitable clinic or its private physician.

The number of pediculosis cases especially has increased, because a number of principals have asked that extra attention be given this condition, and that children with only a few nits, who might possibly have escaped in previous years, be recorded on the class index cards, so as to eliminate, as far as possible, the danger of any further infection by getting every single child under proper treatment. Splendid co-operation has been afforded the nurse by the school principals and teachers, in a very serious endeavor to diminish the number of these cases.

The number of cases of trachoma has declined from 2,052 in 1918 to 1,675 in 1919.

Follicular conjunctivitis has dropped from 864 in 1918 to 128 in 1919.

Acute conjunctivitis has dropped from 13,697 in 1918 to 12,457 in 1919.

There has been an increase in the number of ringworm cases from 3,474 in 1918 to 4,190 in 1919.

Scabies increased from 1,795 in 1918 to 2,840 in 1919.

Impetigo increased from 11,239 in 1918 to 15,264 in 1919.

Various miscellaneous disorders have increased from 57 in 1918 to 357 in 1919. This is due to the fact, as previously stated, that more attention is being paid by the teachers to these conditions during morning inspection than in previous years.

There was also an increase in the number of exclusions for these minor contagious diseases, from 10,925 in 1918 to 12,384 in 1919. It has been found in a number of instances that to exclude a child occasionally in a school has a good effect on others, and that treatment for many cases can thus be more rapidly secured.

The visits and consultations by inspectors have fallen off considerably during the year, as so much of their time has been taken up with special surveys and investigations. A total of 37,677 visits were made by the inspectors in 1919, in contrast with 60,622 in 1918. As a matter of fact, there were less visits for physical defects required by the inspectors, because the nurses could make most of these. This was due to the fact that the inspectors made a lesser number of physical examinations during the year, so that each nurse had no more pupils with physical defects than she could herself look after.

In 1918 there were 10,781 visits made to contagious diseases by the inspectors, while in 1919 there were only 4,307. This is to a large extent accounted for by the



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fact that there were less unreported cases of contagious diseases in 1919 than in 1918.

The nurses made a total of 288,158 visits in 1919, as contrasted with 287,347 in 1918. This is a very splendid showing, when it is considered that part of their time, too, was taken up with special work.

The inspectors held 18,142 consultations in schools in 1919 and 19,827 in 1918.

The nurses held 121,813 consultations in 1919 and 116,247 in 1918. This also shows excellent work on the part of the nurses.

### *Vaccinations.*

Vaccinations performed in the schools in 1918 amounted to 23,926, while but 19,828 were performed in 1918; 1,459 re-vaccinations were performed in the schools, as against 1,297 in 1918. Medical inspectors of this division also performed a large number of vaccinations at the baby health stations during the months of May and June and assisted in the performance of some at the borough offices, during the rush periods.

### *Examinations for Physical Defects.*

The number of children examined compares very favorably with that of 1918:

#### Regular examinations:

	1919.	1918.
Number examined.....	248,978	247,735
Number found with defects other than of teeth only .....	91,268	86,311
	(36.6%)	(34.8%)
Number found with defects of teeth, as only defect..	92,812	104,587
	(37.3%)	(42.2%)

#### Other Examinations:

Re-examinations .....	85,570	94,304
	1919.	1918.

#### Summary of Regular Examinations for Physical Defects:

Number of children examined.....	248,978	247,735
Number found to have defective vision.....	17,895	23,362
	(7.2%)	(9.4%)
Number found to have defective hearing.....	1,252	1,214
	(.5%)	(.4%)
Number found to have defective nasal breathing....	28,986	25,168
	(11.6%)	(10%)
Number found to have hypertrophied tonsil.....	38,151	33,475
	(15.3%)	(17.5%)
Number found to have cardiac disease.....	3,798	3,979
	(1.5%)	(1.2%)
Number found to have pulmonary disease.....	689	742
	(.3%)	(.2%)
Number found to have orthopedic defects.....	2,243	1,989
	(.9%)	(.7%)
Number found to have nervous affections.....	1,407	1,504
	(.6%)	(.6%)
Number found to have defective teeth.....	155,218	161,686
	(62.3%)	(65.2%)



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### Summary of Cases Terminated:

Defects of vision corrected by glasses.....	8,787	12,040
	(49.1%)	(51.5%)
Defective nasal breathing corrected by surgical means	5,836	5,543
	(20.9%)	(22.0%)
Hypertrophied tonsils corrected by surgical means..	7,276	6,809
	(19.0%)	(20.3%)
Orthopedic defects corrected by surgery.....	18	49
	(.8%)	(2.5%)

The results achieved in the number of cases terminated with actual treatment compare favorably, indeed, with those of 1918 and preceding years.

### *Cases Terminated.*

It has not been found possible to terminate as many cases in 1919 as in 1918, on account of the lessened number of physicians at the various hospitals and clinics, and the fact that the price of treatments has gone up markedly.

	1919.	1918.
Received treatment:		
Defects of teeth only.....	7,660	12,605
Associated defects.....	41,484	52,690
Refused treatment:		
Defects of teeth only.....	877	1,379
Associated defects.....	2,647	4,423
Left school:		
Defects of teeth only.....	941	1,096
Associated defects.....	3,657	4,245

### *Health Leagues.*

The work among these leagues has not been particularly encouraging during the year. There have been so many changes in nurses groups, and so much other work to be attended to, not only by the nurse, but by the teacher, who has had to double up the number of children in her class and prepare for pageants, drives, and the like, that it has not been possible to secure the co-operation of the teaching force, nor the attention of the children for concentrated work of this kind. An endeavor has been made, of course, to keep as many leagues going as possible, but, with the exception of one or two instances, the result achieved has not been brilliant.

### *Miscellaneous School Activities.*

Every endeavor has been made to increase the number of parents present when the children are examined. Notes were sent to them by teachers of kindergarten and 1-A classes, consultation slips have been sent by the nurses, and yet the number present has not been at all satisfactory. It has been found that a large number of the parents, especially in the poorer districts, work, and therefore cannot take the time to attend. In the better districts the parents do not attend on account of social and other duties. They seem to feel that the examinations made by the doctor are good, and in many instances accept his recommendations and get their child under treatment.

More and more co-operation is being established between teachers, principals, district superintendents, parents' associations and the school doctors and nurses. In some districts the nurse can get almost anything that she requires, from the people in the district. In some districts, too, the school authorities and parents look upon the

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inspector as a real medical advisor, and come to him to discuss their various troubles and ask advice from him. It is the constant endeavor of the nurse to increase the number of visits to dispensaries by children who cannot afford to pay a private physician. Very often, when the parents cannot attend with the children, the nurse will gather a group about her some morning, or afternoon, and take them all to a neighboring clinic for treatment.

The arms of all children admitted to school for the first time are examined by the medical inspector for vaccination scar. If none is apparent, the principal is so advised and requested to see that the child secures proper vaccination. Principals have also been advised of the vaccination law so that they may instruct their clerks to secure proper vaccination certificates from children, other than those entering school for the first time.

Not much can be done to lessen the number of children whose vision is not tested at the first examination. The picture and object charts advocated by some are not efficient in detecting defects of sight. The shadow test should be used on all children entering school for the first time. There are difficulties, however, in the way of performing this test by the inspector, which have as yet not been overcome.

Various sight defects are discussed with the teacher when the doctor looks over the class. She is requested and encouraged to send down to the doctor, for more complete examination, any child with "squint" who seems to strain in looking at objects, or who hold them too close to or too far away from the eyes. The percentage of children who obtain glasses for defective vision is constantly increasing. This is due to the fact that children wearing glasses are no longer looked upon as a rarity in the City, and therefore their friends do not make so much fun of them as formerly. They are therefore more willing to secure them and to wear them. Then, too, the parents have learned, through the instructions of the nurses and doctors, of the danger of neglecting defective vision and are more willing to take their children for suitable examination.

In many cases funds are provided sometimes by the principals, more often by the nurse, with which to secure glasses for those children whose parents are unable to pay for them.

Every effort is made by the nurses to secure effective treatment for defects, such as mouth breathing, decayed teeth and hypertrophied tonsils. The nurses visit the social service agencies of the hospitals or clinics in their district, and by doing favors, such as securing family histories or other data required for the work of the former, will, in turn, secure beds and operative facilities for tonsils, teeth, adenoids, or examinations for defective vision, through the influence which the social service department is able to exert upon the medical staff. The nurses also, in this way, very often secure free treatment for cases that could not otherwise be treated.

It has not been possible to do much in the way of establishing nutrition classes. A number of principals though have been interested in the work for defective nutrition, especially when they have been informed that there is a high percentage of malnutrition in their school. They have held parents' meetings, to which a doctor and nurse have been invited to be present, to discuss the feeding and care of children, and have assigned a special teacher to assist the nurse in instructing parents in the proper preparation of food and the kinds of food to give.

No special efforts have been made to establish cardiac classes. Requests have come from certain principals to examine certain pupils in their school, who were supposed to be suffering from that disease. These children have been examined. Where cardiac conditions have been found, the children and parents have been instructed and the teacher advised as to the proper care of the child.

Doctors and nurses have attended many parents' meetings for the instruction

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of mothers and fathers in the care and bringing up of their children. Some of these meetings have been very largely attended and the interest displayed evidences the fact that the effort made to bring the parents together for work of this kind was well worth while.

Toothbrush drills have been given regularly throughout the year; at least twice a term to every child in the school, but more often in the lower grades. Toothpaste furnished by one of the largest manufacturing concerns has been given to the child as a reward for proper care of the teeth. Some of the nurses have purchased toothbrushes wholesale, so that all the children in the school could be supplied.

Through parents' association, welfare organizations, neighborhood houses and agencies a number of the nurses have been able to secure milk and, in some cases, lunches for needy children. Many of the parents have been surprised to learn that their children have been drinking milk in school, and it has been much easier to impress them with the fact that they should have it at home, and that the children will take it.

Several neighborhood houses have established lunches for worthy children, where they are served a hot noonday meal, at a cost not exceeding five or ten cents. In many of the open-air classes the children bring a penny or two a day, and this is sufficient to provide them with milk and cereals. Some of the nurses have held bazaars at which they have made quite large sums of money. The health leagues in the schools have helped make these bazaars a success, or in other ways co-operated in obtaining money, not only for milk and lunches, but also for shoes, eye-glasses and other necessities for worthy children.

All of the hospitals and dispensaries have been canvassed in order to obtain special concessions for school children. Many of them set aside a definite time when a nurse may bring children to the clinic for treatment. Many of them, too, will remit the fee for medicine or operation, if the child is sent with a note, stating that it is a worthy case.

In order to detect, eliminate and prevent the spread of contagion, teachers have regularly been instructed in the detection of early signs and symptoms of the contagious diseases. They have been instructed to send to the doctor or nurse any child showing signs of fever, flushed face, rash, pallor, or apparently suffering from gastric or other disturbance. An endeavor has been made to see that the daily list of contagious diseases is sent through the schools regularly each day, and that the teacher notes in the record book any child absent from her class on account of contagious disease, or in whose family there is such a case. A list of absentees is furnished the medical inspector daily, by the principal, of cases where it is suspected that contagious diseases may be existent in the home. Wherever two or more cases of the same disease appear in a classroom, the class is "routined" (inspected) regularly by the doctor and the nurse until the period of incubation, following the last case, has passed. In the case of diphtheria, cultures are taken—if the infection of the second case appears to have come from the first. Parents are advised to have the Schick test performed on their children, so that it may be determined whether or not they are susceptible to diphtheritic infection, and immunization is also offered when considered advisable.

When it comes to the question of pediculosis, one feels that the problem is rather one to be "dissolved" than solved. Could the chemist provide us with something that would loosen the nits from the hair and yet not injure it, this problem would be greatly lessened. As it is at the present time, many formulae and methods are used in order to attempt to keep down the number of these cases. The problem has become so important, and apparently so lucrative, that a number of women in this city have gone into the business of freeing children's heads from pediculosis.

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In the schools, more and more of the principals are coming to see the importance of this problem. A number of them now refuse to promote or to graduate children from their schools, whose heads are unclean. In the classroom they are segregated, being put in aisles by themselves. They are not allowed to wear hair ribbons; receive a "C" or lower mark in hygiene in many of the schools, and the percentage of the class itself is marked low, if there are cases of unclean heads in it.

The health leagues have also helped in the problem of cleaning up, the girls taking a special interest in the welfare of their school, and feeling that it is a disgrace to have cases of this kind in any class.

### *Little Mothers' Leagues.*

Little Mothers' Leagues in schools should be conducted throughout the year by the teachers themselves in the schools. It should not be a part of the nurse's duties to give definite instructions for a period of time to the scholars. Lessons should be arranged by the teachers, and occasionally the nurse and inspector should be called in to talk to the children on these topics; the work being part of the school curriculum, the same as cooking and sewing, would have to be undertaken by all the girls of twelve years of age or over, and the results achieved would be in proportion to the number taught by the teacher and those now taught by the nurse.

Of course, it is realized that this policy cannot be adopted just now, as it must be passed upon by the Board of Education. In order, therefore, to make the lessons as effective as possible at the present time, they should be begun in March or April, so that as many lessons as possible can be given by the nurse during the school period. Principals should be spoken to by the supervisors and shown the value of the work, in order that they may co-operate, possibly assigning a teacher to assist the nurse in maintaining discipline and noting that all girls twelve years of age and over attend meeting regularly.

On account of the small number of nurses assigned to the Bureau, it is rather difficult to continue the leagues throughout the entire summer, as they require nurses who are especially fond of children, who know how to handle them, and who will take a particular interest in this sort of work.

The children also become restless during the summer period and unless they are taken on trips and excursions occasionally, and offered rewards and prizes for their attendance, they soon drop out of the league, and it has to be disbanded.

The fact that a new nurse must be assigned to take care of the league when their own school nurse goes on vacation, also is a factor in diminishing the attendance; the girls not knowing the new nurse, and not knowing how she is going to act towards them, do not care to attend.

It will be well, therefore, in the latter part of July, to merge the school league with the nearest baby health station league, if there is one in the vicinity, so that the girls can be interested in the demonstration work and the actual care of babies at the stations. Girls who attend regularly should be provided with a little ornate certificate or diploma, showing that they have attended regularly and have completed the required course of instruction.

### *Co-operation of the Department of Education.*

The adoption of the "Syllabus of Hygiene" by the Department of Education has worked great good in getting more co-operation in health work by teachers. A greater number of cases have been referred by teachers for examination, although it is true that a large percentage of these are found by the doctors to have nothing the matter with them. In some schools where the principals are particularly inter-



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ested in the work, the teachers pay great attention to the condition of their children, and materially assist the nurses in cleaning them up, and in the correction of physical defects. In other schools, however, the teachers simply refuse to do the work called for in the syllabus, and no more cases are referred than formerly.

In some of the schools the teachers have carried out the provisions relating to the testing of eyesight with the Snellen chart. The large number of children, however, found defective by the teacher, show that they have not been properly instructed. A number of children marked with vision as high as 20/70ths and 20/100ths, have been found, upon re-examination by an inspector, to have normal vision.

Many of the teachers seem to be more careful than formerly in referring minor contagious cases and cases of illness to the doctor or nurse. This has resulted in some schools in, practically, the elimination of minor contagious diseases, such as ringworm, impetigo, scabies and the like.

### *General Impressions of the Year's Work.*

The standard of personal cleanliness in the schools, on the whole, seems to be gradually improving. The nurses are constantly preaching "cleanliness" through their talks to the children in the classroom, through health leagues and through the Little Mothers' Leagues. Most teachers are glad to help in work of this kind, as they feel with dirty children in their classes they themselves cannot keep clean.

The stoppage of immigration, too, in keeping out the uneducated hordes of illiterate folk from Europe, who have not become used to our American methods of hygiene and sanitation, has given us time to work on those at present here and make them realize that cleanliness is really next to godliness.

The greatest deficiencies in our present system of early detecting, preventing and excluding children suffering from contagious diseases are the facts that teachers do not generally know the signs and symptoms of contagious diseases, and therefore do not detect them early enough to be of value. The daily list of contagious diseases does not always reach the schools to be sent through them in time for exclusion of other children in a family, and in some schools is not closely scanned by the teachers, in order to find children who should be out, or, perhaps, is not sent through the school at all by the principal. Teachers do not go over their list of absentees closely enough in order to ascertain, if possible, whether or not it is a contagious disease that is keeping the pupil out. Very often by a discreet inquiry in the classroom, or by sending for a brother or sister in the school, the teacher will be able to find, and to notify the department of, concealed cases of contagion.

The greatest obstacles in the way of procuring treatment for children suffering from physical defects are:

In the first place, the fact that there are, by no manner or means, sufficient facilities in the city for caring for all of the children whose parents are willing to have them treated. Clinics, hospitals and dispensaries are constantly overcrowded with school children applying for treatment; there are so many of these that the doctors cannot give them the proper time or care, and so the parents and children go away dissatisfied and do not return.

In the next place, the ignorance of parents in general helps to keep down the number who should have treatment. It is in many cases difficult and in some impossible to persuade a mother or father that a child should be operated upon for tonsils or adenoids, or secure glasses, and often, in many cases, that the teeth should have attention. Then, too, the child must be considered. It is surprising to note the large number of children who rule their parents, and if the child refuses to go for treatment the parent simply shrugs his or her shoulders, and says to the doctor or nurse, "What



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can I do?" In many instances, also, parents cannot afford to pay a private physician, and yet do not wish to take their children to the hospital, either from the fact that they do not wish to accept charity, or that they fear the hospital may keep the child and operate upon it, whether or not the parent wishes it. In some clinics, too, the charge for treatments has gone up so much that parents cannot afford these either. Private physicians' fees, in the majority of school children's cases, for special treatments, are practically prohibitive. Sometimes parents may be willing to take their children, but on account of their employment, find it impossible to do so.

### *Other Work By School Medical Inspection Personnel.*

A great deal of work has been done by employees, doctors and nurses in the Division of School Medical Inspection for other bureaus, as well as other divisions in the Bureau of Child Hygiene, and also for outside agencies.

The Bureau of Records has been supplied with a medical inspector every other Sunday throughout the year; has been given relief, when their burial permit clerk has been ill or on vacation, for weeks at a time.

It has furnished to the Bureau of Preventable Diseases diagnosticians for work during the epidemic of influenza, as well as when their work in that bureau became heavy. The inspectors have given a number of talks on tuberculosis and other topics for the Bureau of Public Health Education.

To the Mercantile Division of this Bureau, doctors and nurses have been supplied during the rush periods. During the summer vacation paper rush period practically every doctor and nurse in the division was assigned to this work in the various school centres, in which these papers were issued.

Doctors and nurses were assigned to the Mayor's Committee boat "Correction" during the summer time, and also to the St. John's Guild.

A force, sufficient to cover the work, was assigned to the Drug Addict Clinic, when it was first opened, and continued there for a long period.

Doctors were assigned to the Baby Health Stations beginning in May and through June, to perform vaccinations for the large number of children applying therefor at that period.

Doctors were also assigned daily, for four days a week, in the Boroughs of Manhattan and Brooklyn, to the various truant centres to perform examinations on truants brought before the courts at these places.

Doctors and nurses were assigned to bring up to date a long list of delinquent visits to midwives and foundling keepers for the Division of Midwives and Foundlings.

The entire force of inspectors was assigned to the Commissioner's office to carry out the malnutrition survey for children between the ages of two and six years.

At the diet kitchen of the New York Diet Kitchen Association inspectors were assigned regularly every Saturday throughout the year, and for three days a week during the summer vacation period.

During a smallpox scare a number of inspectors were assigned to vaccinate in schools in the neighborhood in which the cases had occurred.

Practically all physical examination work was discontinued for a long period during which malnutrition surveys, asked for by the Board of Education, were being made and completed as rapidly as possible; thereafter the No. 3 and No. 4 cases found in these surveys were examined by the inspectors who had made them.

### *Eye Clinics.*

The object of the eye clinics of the Bureau of Child Hygiene is:

*First*—The detection and treatment of all contagious eye diseases among school children, whose parents are unable to pay for private treatment.

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*Second*—The detection of errors of refraction and the correction of these errors. Refraction at these clinics is done by highly trained oculists of proven ability. In the usual eye clinic of the public hospital, the drudgery of refraction is, as a rule, left to the newest and least experienced assistant. It is being realized by the medical profession, that the correct refraction of most children is a difficult problem, calling for a high degree of ability on the part of the oculist and the value of the work done in our clinics is being appreciated by doctors, teachers, and social workers in the general hospitals, who refer many cases to the clinics.

*Third*—The detection and supervision of the partially sighted and blind children, and the treatment of these cases.

The organization of the clinics is somewhat changed from that of last year, the executive officers being:

*First*—The Director of the Bureau, in full charge.

*Second*—The Assistant Director.

*Third*—The Borough Chiefs, who have administrative and disciplinary supervision of oculists and nurses.

*Fourth*—The Supervising Oculist in charge of all technical work in all Boroughs,

*Fifth*—The District Medical Supervisor, and Supervising Nurses, in charge of the oculists and nurses in their districts.

*Sixth*—The oculists and nurses assigned to each clinic to carry out the detail work. In addition to these the medical inspector and school nurse co-operate to the extent that all work in harmony to detect all eye cases in the schools and refer them to the clinic for treatment, as well as to look after the necessary follow-up work which is so important among the poorer classes.

There are ten eye clinics—six of these are in Manhattan, two in Brooklyn, one in the Bronx, and one in Queens.

The work done last year by the teachers in regard to vision testing has been continued this year with somewhat better results. This feature of the work is possible of great expansion if a working plan can be created whereby all children shall be given a vision test by the teacher at the beginning of each term. The test should be made in accordance with a set of simple rules for vision testing to be furnished by the Supervising Oculist.

The clinic and school nurses have done remarkably well during the past year in keeping the clinic active. There is, however, more assistance needed in the follow-up work in the homes in order to carry out the treatment prescribed in many cases, as we have a list of several hundred children whose cases have not been terminated, and the clinics have lost touch with them, due to their failure to keep the appointments made for them.

The success in the treatment of Trachoma, by the intense bi-chloride rub has continued and produced such decided results that we are forced to revise some of our long standing beliefs in regard to this disease. In cases of acute trachoma uncomplicated by syphilis or tuberculosis, and which have not been previously treated with blue-stone or other treatments, and which have not been operated upon, the intense bi-chloride rub, under cocaine, will completely cure without leaving any scar tissue. This leads us to the conclusion that the scar tissue of trachoma is due to the faulty treatment or control of the disease.

In the treatment of corneal opacities the negative galvanism has been further developed and is still used extensively at the special sight conservation clinic at P. S. 30, Manhattan.

The Blind and Sight Conservation work is continuing to grow in importance and results. We now have 699 active cases under supervision and treatment at the Sight Conservation Clinic. 1,114 cases with vision of 20/50 or worse have been sent

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to us as candidates, of which 639 have been terminated cured, and 475 while still under treatment, have improved to such an extent that they have been assigned to normal classes. Of those cases in the Sight Conservation Classes, 33 have been terminated cured, and 34 though still under treatment, have so improved that they have been re-assigned to the normal classes. There are at present 99 children in the Blind Classes.

There is a sufficient number of children in the public schools of New York City, with a vision so poor that they should be in sight conservation classes. There should be a sight conservation class for approximately every 10,000 pupils. The sight conservation method of teaching combined with constant oculist supervision is of the utmost value in the prevention of the progress of myopia, and a perfected method of dealing with children with myopia of a small degree, to prevent the progress of the condition, should be created along the lines of similar work now done in the public schools of London, England. It is recommended that the lighting of the public schools receive more serious attention than it has in the past, as poor lighting of schools is undoubtedly the cause of a great deal of myopia. It is universally recognized that myopia is increasing rapidly, that myopia is due to eye strain and that the effort made by the growing child to study in schools in poor light, and often in artificial light, which is always a strain, is a most active cause for this increase. We have classrooms in some of the schools which are lighted nearly every day with gas light of very poor quality. One large High School has a study room which is used all day by hundreds of pupils, and is lighted only by electricity placed in a high ceiling.

The guidance of the Blind and Sight Conservation Classes is being put more and more on the Supervising Oculist; this includes conferences with other organizations interested in this work, as the National Committee for the Prevention of Blindness, etc., and the feature is sure to increase as the work develops.

Following is the summary of the work done in the clinics last year

### Refraction Service—

Total No. Cases .....	12,544
Total No. Visits .....	30,567
Total No. Refractions .....	27,315
Total No. Rx. for Glasses.....	10,605

This is a slight increase over last year.

### Contagious Service—

Total No. Cases .....	7,276
Total No. Treatments .....	56,368

showing an increase in new cases over last year, with a decrease in the number of treatments due, probably, to improved methods in treating follicular conjunctivitis.

### *Dental Clinics.*

The dental clinic problem has been moving fast since its inception and establishment in January, 1914. In that year eight clinics were established with two dentists and a nurse in one clinic, and one dentist and a nurse in each of the others. Each succeeding year, as experience indicated, the scope and intent of the clinic work has been changed to meet new conditions.

Experience has taught that, everything else being equal, the proper place to do dental work for children is within the school building. There are many reasons for this, but briefly, the time saved to the child's schooling by not having to waste time going to or from, or waiting at a clinic, is one of the two chief reasons, the other

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being the fact that the child accepts the work in a more normal frame of mind, and the total educational effect, dentally speaking, is more evident and lasting. Along with this, the advent of the dental hygienist in this State, and the realization of her value as an essential assistant in a dental clinic, is now completely recognized.

Three of these hygienists were employed temporarily in the Fall of 1917, but owing to the war conditions, their services were not continued in 1918 or 1919, but our programme for the new year calls for a great addition to this branch.

The dental work, as done, is confined to the two younger years of school, with special attention given at all times to children who are held up on the issuance of their work paper certificates, and children in such special classes as the anaemic and sight conservation classes.

The work as done by the dentists consists of all necessary fillings of amalgam—the various cements, and necessary extractions as well as actual prophylactic work and instruction.

The nurse or registrar takes complete care of the clinic and of its clinical records, as well as assisting the dentist while operating. She also does prophylactic work and instruction.

The records that are kept are:

- (a) Parent's consent card.
- (b) Index reference cards.
- (c) Case history cards.
- (d) Daily record card of work done by dentist.
- (e) Daily record card of work done by nurse or hygienist.
- (f) Daily record of all work done in the clinic.
- (g) Weekly report cards of all work done in the clinic.

Interruption in the work of the clinics has been reflected in our figures for the year. These interruptions were chiefly due to resignation and difficulty of replacement by suitable persons.

Although the size of the dental staff remains the same as in previous years, the amount of work performed shows a distinct increase. The figures for the year are as follows:

### *Dental Work During 1919.*

No. of cases brought forward (cases not completed in previous year) .....	4,313
No. of visits to the clinic (initial visits).....	6,689
No. of re-visits to the clinic (visits necessary to complete work) .....	10,253
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Total visits to clinic.....	16,942
No. discharged .....	5,453
No. cured (cases on which complete work has been done)....	5,358
No. dropped (cases dropped for special reasons).....	95
No. cases pending (work not complete on these at the termination of the year) .....	1,238
No. of treatments (a treatment is counted for every separate distinct item in connection with dental work performed).....	57,662
Total number of extractions.....	16,191
Deciduous teeth .....	12,870
Permanent teeth .....	3,321
Fillings (of every variety).....	13,437
Temporary fillings .....	1,256
Permanent fillings .....	12,181



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Cleanings .....	5,698
Other operations (indicates every item of work done for the child not specially listed) .....	4,940
Visits by nurses to homes (with reference to special cases).....	272
Operations (sum total of dental operations performed in child's mouth)....	33,977

### *Special Nursing Features.*

Changes have taken place in the nursing force of the Bureau during the past year, due in a measure to the return of many nurses from military service abroad, and to the great demand for public health nurses in other cities and communities offering attractive inducements to those who have had experience such as the Bureau offers. Numerous visitors come to this office from all over the country and even from foreign parts who are engaged in public health work of one sort or another, who come for the purpose of learning our methods of school and baby welfare nursing; numerous students taking public health courses in the city come to us for their practical experience.

It has been the desire of the Superintendent of Nurses to broaden, in so far as it is physically possible, the nurse's attitude towards her work and to make her better able to cope with the problems that confront her in the performance of her daily duties, by lectures and visits to special clinics.

The special assignments, such as malnutrition and other surveys, have taken much time; it is gratifying to notice the intimate relation the nurse bears to the children under her care in spite of the large number under supervision, ranging from 4,000 to 7,000 per nurse.

The children who have received the intensive instruction during the past year are those suffering from malnutrition or some other form of under-nourishment; donations have been made by philanthropic people who were impressed by the publicity given and by the large percentage of under-nourishment among school children. A fund of \$300 has been disposed of in buying milk for children of the public schools; during the summer months large groups of children have been sent to the country, using for this purpose every available facility at our command.

In connection with the Milk and Dairy Farm Exposition at the 71st Regiment Armory during the month of April this Bureau equipped a booth representing a Baby Health Station, at which there was a daily attendance of doctors and nurses who instructed visitors, distributed literature, and explained the purpose of the Baby Health Stations all visitors who showed an interest. A baby contest was held and prizes distributed to the physically perfect babies attending the Baby Health Stations throughout the city.

### *Issuance of Employment Certificates.*

Notwithstanding the increase in the number of children applying for employment certificates, this has been one of the few years in which legislation containing more stringent provisions for the issuance of such certificates has not been enacted. This does not mean that agencies interested in the welfare of children did not present or support new measures; on the other hand, many bills were introduced, but failed to pass during the sessions. Among the important measures concerning this phase of the Department's activities was a bill providing for the transfer of the issuance of employment certificates, together with the office personnel, to the Bureau of Attendance of the Department of Education. The bill failed to pass. From present indications, many new measures will be added to those of last year and introduced during the 1920 session of the legislature.

Public and private agencies interested in the question of vocational guidance and junior placement have endeavored to interest the applicants in their activities and the benefits to be derived by registering before entering industry. The Bureau of Child



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Hygiene, of the Department of Health, regrets that very little was accomplished in this direction, for the reason that it was impossible to get the children to consider the subject. They needed no assistance in locating positions and, generally speaking, all preliminaries, including interview with prospective employer, date specified for entrance and salary question, had received attention before application for a certificate was made. Invariably the salary was greatly in excess of that received by Department employees of the same age in similar assignments.

The Division has been confronted from time to time with various problems, involving the Child Labor Law, which seemed to work an injustice with certain applicants; therefore, in the preparation of this report the officials in the different Boroughs were asked for an opinion.

*First*—Elimination of the 130 days' attendance required of all applicants between their thirteenth and fourteenth year, or the year preceding the date of application. Many children graduate, and through neglect of the school authorities to inform them that they must attend school or obtain an employment certificate, remain at home or work illegally, and when the attendance officer visits the case, the child has been absent and cannot supply the requisite number of days. This provision is excellent in checking truancy for the undergraduate, but for children who have completed the elementary course, it is unreasonable to insist upon their remaining in school marking time to make up the 130 days. In this connection it is recommended that the Department support any measure which provides for the elimination of this clause with reference to graduates or children absent from school through illness.

*Second*—The repeal of the Summer vacation permit. This certificate permits children over fourteen years of age who meet the school attendance requirement and qualify physically, to be employed in mercantile establishments from July 1st to August 31st. This temporary period of employment gives the child a taste of work, and many fail to return to school in the Fall until the attendance officer forces compliance with the law; many employers fail to dispense with the child's service; moreover, very little choice of position is given and much adverse criticism has been voiced regarding the destruction to mercantile establishments, as it is claimed that the modern factory is superior to the store basement. Many employers are reluctant to employ children and teach them the work for the temporary period of two months.

*Third*—Increase of age limit. At the Convocation on Education, held in Albany, this was a much mooted question. During the session the increase was opposed by several school authorities, while both manufacturer and labor urged its adoption. At the final session one of the resolutions adopted for consideration in the Children's Code bill was a sixteen years' age limit for employment of children in New York State. It is quite certain that any legislation in this direction must be accompanied by a diversified curriculum to handle the 27,000 children retained in school.

During the year 50,866 applications were received for permanent certificates. The physical examinations totaled 49,052; of these 26,036 were found normal or without physical defects; the remaining 23,016 comprise children with very slight defects, which merely required advice; others with minor defects requiring treatment and the withholding of certificates pending same, or cases in which defects were of such nature as to refuse certificates outright; 4,437 children with minor physical defects were temporarily withheld; the defects were as follows, some children having more than one defect:

Children with defective teeth.....	2,717
Children with defective vision.....	2,195
Children with acute eye diseases.....	29
Children with hypertrophied tonsils.....	266
Children with miscellaneous defects.....	509

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In these cases, after the defect was treated or corrected, the certificate was granted. The courts handling violations of the compulsory education law have objected to this procedure. It may seem unnecessary to refuse a child for defective teeth or defective vision, but the benefit to the child's health, which correction or treatment will procure, is of paramount importance to the Department, irrespective of the temporary inconvenience due to the child's delay in entering industry. It is the aim of the Department to place the child in a condition as near normal as possible and thereby lessen or safeguard against future defects arising from the effects of industry. When it is considered that approximately seventy-five per cent. of the cases, so delayed, are corrected or treated and subsequently granted, that facilities are available for the treatment without cost to the parent, and that only the obstinate or negligent cases are brought into court, the benefit derived by the child in an improved physical condition seems to warrant the continuance of the procedure. In the above classification "miscellaneous" covers the temporarily withheld cases, which failed to obtain treatment and were refused certificates. Permanent employment certificates permitting children between fourteen and sixteen years of age to be employed in mercantile establishments or factories were issued to 49,294 applicants. Summer vacation certificates were issued to 4,736, and in 179 cases it was necessary to refuse certificates for the reasons stated in the attached statistical report of the work of the Division.

During the temporary assignment of the Chief of the Division of Employment Certificates to another branch of the City government, the New York Child Labor Committee volunteered the services of its Assistant Secretary to direct the work of the Division, and this assistance was gratefully received and appreciated during the trying period of the annual June rush, when the Division was functioning from about fourteen schools throughout the City.

The spirit of co-operation established in previous years with the Department of Education and State Industrial Commission has continued. The former has a representative assigned to the Manhattan and Brooklyn office for the purpose of referring undergraduates, as they receive their certificates, to the continuation classes in accordance with the compulsory school law. In addition, the Assistant Director of the Bureau of Child Hygiene has on several occasions examined children referred by the Department to determine whether or not their education, as taught by private tutors, or in private schools, is equivalent to that required by the law for an elementary school course or completion of the sixth year. The State Industrial Committee has supervision over the issuance of certificates, and frequent conferences between Department employees have been held and all violations found by Health Department employees have been referred for investigation.

To improve the work of the Division of Employment Certificates the following recommendations are made:

1. Legislation to exempt graduates from 130 days' attendance provision required of applicants between the thirteenth and fourteenth year, or the year preceding application.
2. The repeal of the summer vacation permit law.
3. An increase in the age limit to sixteen years, except for graduates.

### *Open-air Classes.*

In 1904, the Sea Breeze Hospital, located at Coney Island, and caring for children suffering from bone and gland tuberculosis, organized an open-air school for these patients.

In 1908, Bellevue Hospital organized an open-air school on an old discarded ferry-boat, which was properly altered for this purpose. It was called a day camp, as the children remained there from 8:30 a. m. to 5 p. m. on school days.

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Others have been opened since, both on ferryboats and roofs of hospitals and clinics. They are designated as day camps, and very successful results have been demonstrated.

In 1910, an "anaemic class" was organized in P. S. 21, Manhattan, for children who were physically sub-normal. The New York Tuberculosis Committee proposed this experiment and they supplied the equipment and food.

In 1914, The Board of Education took over these classes in the schools and the number has been increased each year. The scope of usefulness has also been widened, as it has been demonstrated that with few exceptions every child will be benefited under such an environment.

Children discharged from day camps or sanatoria as arrested cases were formerly transferred to regular school classes. This exposed them to a relapse, and frequently their work was also too tedious and the concentration required was more than they could tolerate.

These children are now admitted to an open-air class whenever it is possible for them to attend a school having such a class. Soon after, children exposed to tuberculosis in their homes were also admitted to the open-air classes.

In 1913 open-window classes were organized. These are classes where the teachers are permitted to keep their windows open throughout the entire year. There is no special selection of pupils, but an entire regular class is placed in one of these rooms. There is no supervision of this work. The teacher has full control in the management of her class. No data are available as to the results of open-window classes.

In March, 1917, the Board of Education requested the Health Department to take full medical charge of the open-air classes, as the Board found that the medical duties in these classes had increased to such an extent that they were unable to provide it. The Bureau of Child Hygiene assumed medical supervision of these classes and was authorized to carry out the following duties:

1. To recommend organization of new classes.
2. To recommend location of classrooms.
3. To recommend proper equipment.
4. To recommend standards and exercise supervision as to ventilation, heating and temperature classrooms are to maintain.
5. To recommend the pupils to be admitted.
6. To make periodical physical examinations of all pupils and notify parents as to conditions found.
7. To make home visits for the purpose of conferring with, and advising parents as to the need of correcting conditions found.
8. To supply teachers with full information as to conditions found and arrange for co-operation between teacher, medical inspector and nurse.
9. To make routine medical inspection at definite intervals, for the purpose of observing the physical status of the children and room conditions.
10. To supervise and direct weighing pupils monthly and measuring them each term.
11. To make recommendations as to the discharge of pupils.
12. To prescribe physical training exercises for individual pupils.

These classes were formerly officially designated as "Anaemic Classes." As this name gives an erroneous conception of the types of pupils admitted, the Bureau of Child Hygiene recommended that they be called "Open-Air Classes."

By thus designating them the three types of classes with special ventilating methods are appropriately grouped, namely: (1) Outdoor Classes, (2) Open-Air Classes and (3) Open-Window Classes.

Furthermore, by changing the name to "open-air" classes, the stigma which attached

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itself to all pupils in "anaemic" classes is avoided, and these pupils are looked upon as the same as those in regular classes. The parents do not object to give their consent to their children being admitted to an open-air class, though they frequently refused to have them admitted to an "anaemic" class.

This report will only refer to one type of special ventilated classes; namely, open-air classes.

The purpose of these classes is to make it possible for types of pupils whose physical condition prevents them from attending school in regular classes to regain their normal physical condition and at the same time to procure their education without any loss of time.

The Bureau of Child Hygiene has established an organization to conduct this work systematically and efficiently. The organization consists of:

1. The Director of Bureau.
2. The Assistant Director.
3. Supervising Medical Inspector of the Open-Air Classes.
4. District Supervising Medical Inspector of Schools.
5. District Supervising Nurse of Schools.
6. Medical Inspector of Schools.
7. Nurse of Schools.

The respective duties of the various divisions of this organization are:

1. Director:

In full charge of the work, directing and making final decisions as to how the work is to be carried on.

2. Assistant Director:

The executive head of all work conducted in schools by the Bureau, to whom the entire supervising force reports full details of all work performed. He offers suggestions and ideas for improvement of the service. He submits to the Director for approval his recommendations and suggestions, as well as those of the supervising staff.

3. Supervising Medical Inspector of Open-Air Classes:

The executive field head in charge of all the classes. He instructs the district supervising force, medical inspectors, nurses and teachers, how the work is to be conducted and how instructions are to be carried out. He reports directly to Chief of Division.

4. District Supervising Medical Inspector of Schools.

In charge of a definite district. He is responsible for the character of work performed by the medical inspectors of his district and is the general adviser to the district supervising nurse assigned to his district. He reports directly to the Chief of Division, who refers indicated communications to the Supervisor of open-air classes for his approval and investigation.

5. District Supervising Nurse:

In charge of a definite district. She is responsible for the character of work performed by the school nurses of her district. She reports directly to the Chief of Division and the District Medical Supervisor of her district. Her communications are referred by the Chief of Division to the Supervisor of open-air classes for his approval and investigation.

6. Medical Inspector of Schools:

Assigned to definite schools. He is responsible for the admission and discharge of pupils of open-air classes. He examines the pupils at regular intervals, so as to advise what shall be done to improve their physical condition, as well as to advise the nurse as to action required of her. He makes home visits on absentees and on cases referred to him by the nurse. He reports directly to the District Supervising Medical Inspector.



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### 7. Nurse of Schools:

Assigned to definite schools. She is responsible for the weekly inspection of pupils. She carries out instructions of Medical Inspector, co-operates with the teacher, visits homes, conducts school consultations, and performs social service work. She reports directly to her District Supervising Nurse.

At present the following types of children are admitted to the Open-Air Classes:

1. Children exposed to tuberculosis at home or in whose family there has been a recent death from this disease.
2. Children who have had tuberculosis which is now arrested or cured.
3. Children suffering from malnutrition.
4. Children who become tired easily or show languor or fatigue before the end of the day and on this account are unable to carry on their class work.
5. Children suffering from nervous diseases except chorea.
6. Children who frequently are absent because of colds, bronchitis, etc.
7. Children suffering from cardiac disease who are recommended by the private physician as being proper cases for these classes.

The number of classes when this work was officially begun by the Department of Health, on February 1, 1917, was 84 classes. The number has since been increased to 107 classes on January 1, 1920. The increase is only limited on account of the lack of available classrooms for this purpose and the lack of funds to provide the necessary equipment.

Classes are located in public parks, roofs of schools and private buildings and in classrooms located in the public schools.

The ideal rooms for our city are regular classrooms with an easterly and southerly exposure, on a floor high enough to provide a maximum amount of light and air. These rooms require only that the windows be altered so that they can be entirely opened. However, such conditions are not available in all the buildings, especially the old types, but it has been fully demonstrated that splendid results can be procured in any classroom, providing it is large enough for the purpose and has an ample amount of light and air.

Classrooms located in public parks or on roofs are too costly to fit up with the proper amount of structural changes demanded and besides are very expensive to maintain. While satisfactory conditions can be provided in the parks, the roofs in our city are very objectionable because of the smoke, dirt and difficulty of providing proper shelter from high winds, rain and snow.

The extra cost to provide the structural changes in a classroom located in a school is comparatively little, and besides it costs no more than a regular room to maintain it.

There has been no difficulty in maintaining a full register in all the classes this year. The attendance was also excellent, averaging much higher than the regular classes. Fortunately, there was no epidemic this year that affected the attendance of these classes. The Board of Education has established 25 as a maximum register in an open-air class.

The equipment remains the same as last year. Each child has a sleeping bag, cot and movable chair. On account of the lack of funds, however, no new equipment was procured during the year, and it was also impossible to have any damaged equipment repaired.

The equipment used is the minimum that can be of any service. With this limited equipment it becomes necessary for the children to provide themselves with a great deal of extra clothing, sweaters, gloves and overshoes. The need of a better equipment has been frequently discussed, but nothing can be done until the funds available will make it possible to improve it.



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It also appears essential that the teachers be provided with a proper equipment, so that they will not find the low temperature unbearable.

The work has been conducted along the same lines as last year, as it has been found unnecessary to change the instruction to medical inspectors, nurses and teachers.

The medical inspectors examine every child at the beginning and end of each term and as often during the term as any individual child requires it. At each visit to a school having open-air classes the nurse and teacher advise the medical inspector of the condition of the children and particularly those who require his personal attention.

The nurses visit the classes at least once a week and keep the medical inspector informed as to the condition of the children. As the nurses visit these schools daily, the teacher is always able to reach the nurse in the event of any of the children requiring special attention.

All data for each child is noted on the 296-K form, an individual card being kept for each child.

The following-up is conducted in three ways: school consultations, home visits and mothers' meetings. A regulation of the Associate City Superintendent of Schools in charge of the open-air classes demands that the first home visit each term be made by the class teacher.

The nurses hold school consultations and make home visits as often as the individual cases require it.

In the event of any case requiring special attention the nurse refers it to the medical inspector who holds a school consultation or makes a home visit according to the needs of the individual cases referred to him.

Mothers' meetings are held monthly by the teachers and the medical inspectors and nurses co-operate with the teachers at these meetings.

This year has been a very difficult one because of two conditions for which there was no remedy. 1st—Lack of teachers. 2d—Lack of equipment.

1st. Though no teachers in the open-air classes resigned, there were, however, a number of changes due to promotions. Many of these teachers hold licenses for higher positions in the elementary and high schools. As the increase in salary for the open-air class teachers was very little, many of them availed themselves of the opportunity to procure a promotion. On this account a number of classes have new teachers, and in some few instances there are classes still without any teacher. The outlook, according to the opinion of the Associate City Superintendent in charge of open-air classes, is not very bright, as he states that there will be a number who will still receive promotions, and he has no one available to fill their places, at least not this year.

2d. No new equipment was obtained during the year, and no equipment damaged was repaired because of the lack of funds.

Some classes organized for more than two years are still without their equipment. In regard to equipment the outlook is better, as there is quite a fund available; in fact, the Associate City Superintendent in charge of these classes believes he can now supply or repair without leaving any equipment lacking.

The teachers assigned to open-air classes are exceptionally competent and interested in their work. They are now selected with great care, and the supervisor of open-air classes is always consulted before an appointment is given. The principals all now appreciate that no teacher is too good for this work, and in selecting one for their class they are influenced by the qualifications which have been established as essential for any one desiring to teach in one of these classes. These qualifications are: good health; even temperament; capacity for doing a large amount of school work well, as a number of grades must be taught; physical ability to make home visits; tact in handling both children and parents; willingness to do social service and a desire to

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study the problems of this work in the class by reading and taking appropriate courses of study.

The principals and teachers have afforded us full co-operation and are always willing and anxious to do anything that will be of benefit to their individual pupils, both in school and in their homes.

The classes all observe the following daily routine:

9-10 a. m.....	School work
10-10:15 a. m.....	Extra feeding
10:15-11 a. m.....	School work
11-12 noon.....	Rest period
12-1 p. m.....	Lunch period
1-2:45 p. m.....	School work
2:45-3 p. m.....	Extra feeding

We have positively established the fact that the best results are obtained with an a. m. rest period; that is, from 11 to 12 noon, directly before the lunch period. The teachers are now unanimously in favor of this routine, as they all agree that a maximum amount of school work is done with a minimum amount of fatigue. At the final dismissal at 3 p. m. none of the pupils show fatigue. Their p. m. school work is as satisfactory as their a. m. is. Classes located on roofs or upper floors observe a rest period from 1 to 1:10 p. m., which is deducted from their a. m. one, so that the children can get a short rest after climbing so many stairs.

While the original aim of this work was to care for some of the sub-normal physical children, it has been now extended to all types of children physically sub-normal, including cardiac disease cases. The cardiac disease cases must, however, be recommended by their private or hospital physician, as a satisfactory case for such a class.

The number of applications now being received from physicians, requesting that their patient be admitted to such a class, is steadily increasing, and, in fact, many must now be refused on account of the lack of classes.

The work is in this respect sadly handicapped, as the classes can accommodate but a small percentage of those desiring and needing the advantages offered in these classes.

The number of school children exposed to tuberculosis in their homes is over ten thousand (10,000), while the total capacity of all the classes is less than three thousand (3,000). If the total number of other types of children that should have the benefits afforded in these classes were added to the exposed cases, it would be found that fully ninety thousand (90,000) children require such an environment. The present outlook, however, does not give one hope of increasing the capacity of these classes materially for several years.

The Board of Education, however, has promised and has already made provision that at least one open-air class be built in every new school of average size.

The great need for more classes is also felt in the fact that it becomes necessary frequently to discharge a child who has improved so much that it is deemed only fair that another whose condition is bad be given the same opportunity. Many who regain their physical condition would, however, be better off, were they able to remain indefinitely in an open-air class, as many, though they do not go back physically, find it very difficult to do their school work in a regular class, as they miss the advantages of the open-air class, such as light, air, rest, extra feeding, etc., all of which are conducive to real mental activity.

Another phase which has been studied in a very limited manner is the effect of this environment upon the average normal child.

At P. S. 158, Manhattan, there is a class of normal average boys who are in an

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open-air class and follow the full routine, except omitting the rest period. This has been now conducted for five years, a new class each term, making ten (10) classes to date. The classes have all been of the seventh and eighth years. The register has always been over forty pupils. The results have been exceedingly good, as the class each term has been the banner class of the district when the District Superintendent's tests were held. The attendance has also been the best of the district. The teacher in charge finds the boys do much better work, more of it, can concentrate better and require less home work than those in regular classrooms. The teacher states that he himself is never fatigued, is always able to do more work himself and finds he can maintain his interest throughout the entire day.

This appears to be the next step in this work. If results can be procured for the sub-normal physical child, would it not be of greater value to prevent the children from becoming sub-normal by giving them the opportunities while normal that is now only afforded in most instances to a limited few physical sub-normal pupils.

The rest period is not required by the average normal child, but the extra feeding is, when they are in a low temperature for a considerable part of the day.

All the school work, except shop work and drawing, can be done in the open-air classes.

We all know that the children in the kindergarten and first-year classes are better physically than they will be after going to school for several years. Were they, however, to have the advantages offered in the open-air classes throughout their school life, could it not be expected that at least the greater majority would leave school at least physically normal? Besides, under such conditions, it would not be expecting too much to have the infectious diseases, especially tuberculosis, greatly reduced, for they all would surely be better physically when starting their commercial life.

Following the proper way to live so many years, as they would have to do during their school life, would in most instances become a habit that most of them would follow for the rest of their life.

The open-air classes as now conducted remain a study with big limitations; were it extended to all children, no special classes would be required, and each classroom could accommodate a full register instead of a limited few. This must be the ultimate result that will be followed sooner or later, as the most progressive step in preventive medicine.

So long as we have our present limitations, many problems remain unsolved. So much has to do with the home condition or these children. The nurses and teachers have done a great deal of social service work which must be part of their duties. Conditions as at present exist make it very difficult to overcome home shortcomings. One of the biggest problems is to provide proper medical attention. At times it is difficult to get the parents to consent to having their children receive proper medical or surgical care for the defects found by the medical inspectors. In most instances, however, the nurses and teachers have gained the confidence of the parents who willingly agree to have their children properly attended to. However, the facilities are not at hand, and many a child is discharged from the class without having been able to procure treatment. This applies especially to dental care. With few exceptions these classes are located in the poorer neighborhoods, and the parents cannot afford to pay for treatment.

None of the available institutions are willing or appear to be able to care for all the cases within a reasonable time.

Another problem is the lack of special training of the new teachers. There is no proper course that they can take to fit them for this special work. No teacher ought to be given a class until she has been correctly trained. A new teacher is of little use to her class for the first two or three months she takes up the work, as in most cases

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they have only taught one grade at a time. It requires practice and skill to teach six or eight grades during one term.

Though mothers' meetings are held regularly, they are not systematically conducted, and one of the great essentials of this work is to have, especially the mother, understand what she can do for her child in regard to carrying out the proper home conditions that will benefit her child. They must understand what results can be procured before you can interest them to change their home conditions.

One of the greatest problems is to overcome the great loss these children have during the summer vacation especially, though it is always apparent after shorter ones. While we have been able to send a limited number away each summer, the time they are away is so short that little is gained or if gained lost again on their return to the city. Many of these children need a prolonged stay in the country during the summer, but no places are available for such purposes.

A school farm would solve this to some extent, were it possible to procure it, as the children could do enough of the work to make it nearly self-supporting. Over 50 per cent. of the gain made during the school session is lost during the summer vacations.

The proper equipment is easily solved, as it only depends on the funds being available for this purpose.

In our present method of work the inspectors and nurses have their regular school work to conduct, and the open-air class work is extra. Many have no such classes. Were it possible, a separate corps should be assigned to this work. They could be properly trained, and the work would be regularly, systematically and uniformly done. Frequently the work of the inspectors of the open-air classes is now interrupted or interfered with on account of some special work that must be done or some emergencies that arise. This work can never be done as well as it should be without a special corps.

The mothers' meetings, home visits, school consultations and home conditions require some personal qualifications which are not found in many of our corps. Perhaps they do the best they can, but this is not adequate.

Milk has been supplied to nearly every class this year. The cereal and milk has been discontinued, because so much milk was procurable. The usual quantity given was eight ounces twice a day, a. m. and p. m.

In the Boroughs of Manhattan, Bronx and Richmond each class provided its own fund or received it from private sources. In the Boroughs of Brooklyn and Queens the Tuberculosis Committee of these boroughs supplied it for all the classes. The children are urged to bring bread or rolls and butter to eat with their milk. In most instances they bring more than an ample supply of food.

One has only to see how anxious the children are to eat and drink to be convinced of the necessity of it. Likewise, those who do not partake of it never gain or improve as much as those who do, and in time they also join in with the rest and take their share very willingly and with great pleasure.

The number of physical defects which have not been properly corrected are considerably less than last year. Permission is in most cases willingly given by the parents to have their children properly cared for, but there is a great lack of institutional facilities to procure the required treatment. In some instances teachers have been able to interest private physicians sufficiently to get them to treat their pupils gratuitously. Because of the lack of medical facilities and the inability of many to pay for private treatment, many children whose parents consent to treatment cannot be cared for.

The social service work of the teachers and nurses has increased decidedly. The supervising inspector of open-air classes has roused their interest in this part of the



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work and proved the true value it has in procuring the desired results. The teachers now all consider it an essential part of their duties.

The supervising inspector of open-air classes held the usual meetings with the teachers of these classes and gave a course of lectures on the medical aspect of this work, so that the teachers should have a working knowledge of this phase of the work to assist them in carrying out their duties with intelligence.

The home conditions have received a great deal of attention, and the results are very satisfactory. The teachers and nurses have been able to interest most of the mothers to correct any faulty conditions they found and, what is most important, to have the children observe at home the same routine on days there are no school sessions, as they carry out in school. Most of the children take extra feedings and observe a rest period at home on days there is no school session. This has required a great many home visits by the teachers and nurses, besides the mothers' meetings.

The waiting list is maintained in every school by the medical inspector. There is no difficulty in procuring enough proper types of cases or in procuring parents' consents to have these children transferred to an open-air class.

The supervising inspector of open-air classes has visited all the classes systematically and has held conferences with the principals, teachers, supervising medical inspectors, supervising nurses, medical inspectors and nurses in reference to the classes. He has explained to them the various phases of the work and especially questions of importance concerning their own classes. He has examined the records and explained to the inspectors and nurses all errors found. He has attended and addressed many parents' meetings.

As previously noted in past years, the essentials of this work are fresh air, food, light, correction of physical defects that retard growth and development, and hygienic home and living conditions. None of these can be slighted, and all must be observed to procure satisfactory and lasting results.

Our health supervision is along the right lines, and our results depend entirely upon the fact of how efficiently the work can be carried out.

The figures submitted give the best proof of results:

### *Work in the Open-Air Classes of the Public Schools of New York City.*

Number of schools with open air classes.....	78
Number of open-air classes.....	110
Register of classes.....	2,705
Number of pupils examined.....	3,388
Boys .....	1,423
Girls .....	1,965
Number found with defective vision.....	451
Glasses obtained .....	372
Number found with defective hearing.....	36
Treated .....	27
Number found with defective teeth.....	1,811
Treated .....	1,134
Number found with defective nasal breathing.....	396
Treated (operation) .....	161
Number found with hypertrophied tonsils.....	478
Treated (operation) .....	201
Number found with defective nutrition.....	2,855
Improved in open-air classes.....	2,618
Number found with cardiac disease.....	96
Treated .....	96



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Number found with pulmonary disease.....	72
Treated .....	67
Number found with orthopedic defects.....	86
Treated .....	86
Number found with nervous affections.....	31
Treated .....	31
Total number of children discharged from classes.....	683
Total number of pretubercular children.....	628
Total number who gained.....	3,161
Total number who did not gain.....	214
Total number who lost.....	23
<i>Work of Medical Inspectors.</i>	
Inspections .....	743
Regular physical examinations .....	3,688
Re-examinations .....	9,674
<i>Work of Nurses.</i>	
Contagious Diseases:	
Inspections .....	45,167
Instructions and treatments .....	12,344
Physical Defects:	
Instructions at school .....	12,545
School consultations with parents .....	1,612
Cases terminated .....	926
Visits:	
For contagious diseases .....	394
For physical defects .....	4,639
To dispensaries .....	241
To lectures .....	237

The method of weighing the children has improved and is now uniform, so that the data are accurate. No child is considered to have improved unless a gain of at least half a pound a month is made. The average gain during the year was more than eight and a half pounds. Those who have not made a normal average gain are studied by the medical inspectors to ascertain the cause of the failure to gain. In most instances this is remedied and a gain quickly established.

The children show a proportionate gain according to the temperature—the lower the temperature, the greater the gain. This seems to prove that it is not only fresh air, but also a low temperature that is required to procure a rapid gain in weight. This appears to be due to the fact that the appetite is remarkably increased during cold weather. With the first signs of spring, the children fail to gain as rapidly, and one can readily determine that their appetites immediately decrease. This is an observation that has always been noted by those closely following this work.

### *Open-Air Scholarship Record.*

The school progress of the children in the open-air classes is perhaps best demonstrated by the following table, the data for which was supplied by the teachers of the open-air classes:

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## OPEN AIR SCHOLARSHIP.

Grades Advanced.			Progress as Compared to Previous Record.		
More Than One Grade.	One Grade.	Less Than One Grade.	More Rapidly.	Same Rate.	More Slowly.
277	2,802	309	840	2,520	28

The few children who failed to progress at least as well as they did in their former classes are backward children. It is readily appreciated that a mental defective cannot progress pedagogically in an open-air class where the individual instruction he requires cannot be offered to him, even though his physical condition be brought to normal. The classes have too many grades to permit the teachers to give much individual instruction.

### *Results of Work in Open-Air Classes.*

Last year a report was submitted of 367 children who were followed up after discharge from open-air classes. These children were followed up again this year, and it has been found that every one of them has continued to remain in good physical condition, able to carry out the work of his or her regular grade.

This year 683 children were discharged from the open-air classes as fit to proceed in a regular class. Of this number it has been possible to follow up 491 to the end of this school year, with the following results:

### CASES DISCHARGED FROM OPEN-AIR CLASSES

Gained Weight.	Remained Same Weight.	Lost Weight.	Scholarship Improved.	Same.	Worse.
417	2	0	116	311	0

It has not been necessary to return a single child, discharged during the year, to an open-air class because of loss in weight or because the physical condition became so bad that they were unable to carry out successfully the work in a regular class. These results are undoubtedly due to the fact that the medical inspectors exercise great care in selecting children to be discharged from open air classes, and to the further fact that the children continue to live as they were taught to do in the open-air classes.

### *Summer Vacation.*

The Association for Improving the Condition of the Poor cared for five hundred boys of the open-air classes at their summer camp at Southfield, N. Y., during the summer of 1918. They are to do the same again this summer for a like number of boys. Those who had this splendid opportunity, all showed the benefits of their stay in the country.

The Tuberculosis Committee of the Boroughs of Brooklyn and Queens opened a camp on Long Island and will care for seventy-five girls of their boroughs, all selected from the open-air classes, during the summer.

All the members of the Bureau of Child Hygiene whose work brings them in touch with the open-air classes take this opportunity to express their thanks for the hearty co-operation of the Associate City Superintendent in charge of special classes,

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as well as to the principals and teachers, the various committees on prevention of tuberculosis and their respective supervisors, who follow up this work so closely.

The frequency that parents appeal to the inspectors, nurses and teachers to keep their children in these classes because they have improved so much proves again its value.

The results of children who have been discharged show that in most instances the gain they have made is lasting, if not permanent.

All children improve physically.

Most of them improve in school work besides.

All learn hygiene living conditions.

All follow rules to maintain health.

Most have their physical defects corrected.

Cardiac cases markedly improve.

Arrested cases of tuberculosis have no relapses.

Exposed cases to tuberculosis maintain good health and do not acquire the disease.

They learn to eat proper food and to like it.

### Supervision of Midwives and of Children Boarded in Private Homes.

The need of private homes for the board and care of children has been abnormally acute during the past year, because of the unsettled economic and social conditions, and these factors have made it exceedingly hard to obtain them. In the past, the founding keepers have been just able to meet the cost of food and clothing from the compensation, but the increased cost of food and clothing and the scarcity even of these necessities has decreased the number of those applying for permits as shown by the following table:

### NUMBER OF PERMITS IN FORCE DECEMBER 31, 1911 TO 1919, INCLUSIVE.

1911 .....	2,027
1912 .....	2,835
1913 .....	3,123
1914 .....	4,234
1915 .....	4,740
1916 .....	5,330
1917 .....	5,698
1918 .....	3,238
1919 .....	2,798

### *Routine Procedure in the Licensing and Supervision of Homes.*

Previous to 1918, homes were given permits for a maximum number of children. During 1918 the policy was changed to issuing permits for a minimum number of children. It was felt that in many instances, even with this change of procedure, that permits were issued for a larger number of children than the home was capable of accommodating. Therefore, in 1919, permits were issued for the care and board of one or two children, and where a permit was requested for three or more, two inspections were made by different medical inspectors, and the permit was issued for the smaller number. It is believed that this has placed a check on the overcrowding of homes and has improved the conditions under which the children live and facilitated their care not only by the permit holder, but by the Department.

### *Classification of Homes.*

Homes are classified according to their adaptability to the care of breast fed and artificially fed babies under two years of age and children from two to six years of age and are graded according to their general moral and sanitary conditions. This grading and classification of homes has facilitated the placing of children.

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### *Co-operation with Other Agencies.*

This Division has actively co-operated with the Department of Public Charities, the Babies' Welfare Association and other agencies placing children. Lists of homes properly classified and graded have been furnished. The Association for the Prevention of Cruelty to Children has been furnished a monthly list of new permit holders, and this organization has greatly aided the Department in following up those who have moved or who have obtained permits through false statements. The Division has also co-operated with the Association in the prosecution of those violating the rules and regulations governing the board and care of children. Through the activities of this Association the Department has been able to remove children from undesirable homes on short notice. The home boarding children received from parents or relatives continues to be the greatest problem of the Department. It is among these that there is the greatest neglect and violation of the rules and regulations governing the board and care of children. Many of these delinquencies have been brought to court, but with very little result. An exception to this is a case of a foundling keeper of the Borough of Brooklyn who had constantly violated the regulations for a period of four years. She had been brought to court no less than four times, but had always been able to have the case dismissed or prolonged until it was finally dropped. She boarded children without a permit, and when a permit was granted boarded more than allowed, openly defying the Department. This woman happened to live in a neighborhood where a large number of permits were in force, and her attitude toward the Department was demoralizing. Finally her case came up before a Magistrate who was particularly interested in child welfare, and he went into it in detail, with the result that she was convicted of violation of the Sanitary Code and fined. This particular case required a great deal of preparation and time, which was compensated for, as it improved the morale among all of the foundling keepers and also gave the inspectors and nurses confidence in enforcing the regulations.

### *Registry Kept by Foundling Keepers.*

During 1919, a special effort was made to have foundling keepers maintain their registry of children boarded as required by the state law and the Sanitary Code. This registry has aided the Department in fixing the responsibility for those who placed children to board and has also been a check on the visits of the nurse and inspector.

### *Inter-departmental Co-operation.*

Institutions and agencies placing children to board have been urged to avail themselves of the facilities offered in the care and feeding of infants and children at the Department of Health Baby Health Stations. Many cases of malnutrition, a common condition in the homes of those boarding private children, have been cured as a result of the supervision by the Baby Health Station doctor and nurse. Particular mention should be made of the excellent work done at the Baby Health Station, 2155 Fifth avenue, in this respect. The division nurses and inspectors have actively co-operated with the Bureau of Preventible Diseases by reporting infection and possible tuberculosis in the homes of foundling keepers. Every effort has been made to increase the number of available wet nurses by requesting mothers of still-born babies and mothers of babies who have died to wet-nurse the child of another. These mothers are required to submit to an examination of their blood before they are allowed to receive a baby.

### *Study of Permits to Board and Care for Children.*

Believing that there were a large number of permits in force which were not utilized at all or to a lesser extent, a study of all permit holders was made with the following results (table showing permits in force in relation to the number of children actually in board) :



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Number of Permits in Force	Number of Children Allowed on Same	Number of Permits Inactive	Number of Children Actually in Board						Total
			1	2	3	4	5	6	
1. 836	836	319	517	....	....	....	....	....	517
2. 1,072	2,144	314	318	880	....	....	....	....	1,198
3. 587	1,761	138	74	220	795	....	....	....	1,089
4. 222	888	40	8	36	108	480	....	....	632
5. 71	355	8	1	8	48	44	155	....	256
6. 10	60	2	....	....	....	12	15	12	39
Total, 2,798	6,044	821	918	1,144	951	536	170	12	3,731

NOTE.—The number noted under "total" should be the sum of the numbers listed under 1, 2, 3, etc.

This table shows of 2,798 permits in force, 821 were not utilized. The largest number of permits were for two children and were utilized to the greatest extent; that a total of 6,044 children were allowed to board on 2,798 permits, and that there were actually in board 3,731 children on 1,977 active permits, an average of nearly two children per permit.

Recommendations for the improvement in the methods of control of private homes boarding children:

1. That all agencies placing children to board be required to obtain a permit to do so, and that those holding permits to board children be required to receive children only from agencies having a license to place them.

2. That the City compel all foundling keepers receiving City charges under two years of age to register them at the nearest Department of Health Baby Health Station and attend the station regularly.

3. That when the permit is mailed to a foundling keeper a copy of the rules and regulations governing the board and care of children accompany it, or else have the rules and regulations printed on the reverse side of the permit. Also that a circular of infant and child care with the addresses of the various Baby Health Stations accompany each permit.

#### *Delinquencies of Foundling Keepers.*

During 1919 a total of 19 permits were revoked for cause. Two hundred and fifty complaints were received regarding foundling keepers and were investigated.

#### *Supervision of Midwives.*

During 1919 the Division tried to maintain an efficient control of the practice of midwives in spite of the fact that conditions throughout the city were abnormal; many physicians were still in war service; hospitals were overcrowded and the birth rate abnormally high, through educational propaganda regarding the employment of only those midwives who are well trained and who reflect their training in their personal appearance. This educational propaganda has resulted in the elimination of the old type of midwife and the increased utilization of the better trained type. With these handicaps the actively practicing midwives have delivered not quite as many cases as formerly in the entire city, but have delivered more cases per midwife. Still there has been no increase in sepsis or stillbirths. The following table shows the extent of the practice of midwives, years 1909 to 1919, inclusive:



BUREAU OF CHILD HYGIENE  
STATISTICS OF MIDWIFE PRACTICE.

Year.	Number of Midwives Registered.	Number of Births Attended by Midwives.	Per Cent. of Total Births.
1909.....	3,131	49,616	40.35
1910.....	1,515	51,996	40.28
1911.....	1,488	51,756	38.48
1912.....	1,325	52,743	38.88
1913.....	1,488	50,364	37.27
1914.....	1,488	52,997	37.69
1915.....	1,469	49,915	35.34
1916.....	1,799	46,487	33.78
1917.....	1,656	47,525	33.6
1918.....	1,612	42,307	30.6
1919.....	1,695	41,876	32.1

*Suppurative Eye Cases.*

This Division has been delegated in the control of suppurative eye conditions which are reportable to the Department of Health under Section 91 of the Sanitary Code. A tabulation of the cases reported shows the following:

SUPPURATIVE EYE DISEASES AMONG INFANTS.

	1918.	1919.
Number of suppurative eye cases reported.....	35	57
Reported by midwives.....	25	27
Reported by physicians.....	4	9
Reported by institutions.....	2	7
Reported by other organizations.....	4	14
Number of cases cured.....	32	49
Number of cases blind.....	..	..
Number of cases partially blind.....	..	..
Moved and condition not known.....	3	8
<i>True Ophthalmia.</i>		
Number of cases reported.....	17	27
Reported by midwives.....	5	2
Reported by physicians.....	5	7
Reported by institutions.....	5	18
Reported by other organizations.....	2	..
Number of cases cured.....	10	20
Number of cases blind.....	..	2*
Number of cases partially blind.....	..	..
Moved, condition unknown.....	7	5

\* Died.

A review of the foregoing table is gratifying, as it shows the infrequency with which the midwife meets with true ophthalmia and that they are using the prophylactic drops in most instances. Also that they are reporting suppurative eye conditions, as the number of simple suppurative eye cases reported has increased from year to year, and the number of cases of true ophthalmia has decreased. The results of the treatment of these cases are also very gratifying. It is known that a large number of cases visiting clinics and hospitals are not reported, and a questionnaire has been sent

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to each hospital and clinic requesting data as to the suppurative eye cases treated. This information has been compiled and will form a basis for a better co-operation between those institutions interested in the prevention of suppurative eye conditions and blindness, namely, the Department of Health and those who treat diseases of the eye.

### *Puerperal Sepsis.*

As in the case of suppurative eye conditions, this Division has also been delegated in the control of puerperal sepsis. All reports of this illness are forwarded to the Division, as are the certificates of death from childbirth. The following table gives the facts regarding puerperal sepsis for the years 1915 to 1919, inclusive:

PUERPERAL SEPSIS CASES.

Year.	Attended by Midwife.		Attended by Physician.		Attended by Hospital.	
	Fatal.	Non-fatal.	Fatal.	Non-fatal.	Fatal.	Non-fatal.
1915.....	43	0	226	2	...	21
1916.....	50	0	195	16	...	135
1917.....	40	1	156	20	33	70
1918.....	15	1	61	18	84	114
1919.....	14	2	41	30	102	72

The foregoing shows that there has been a marked decrease in fatal sepsis among cases cared for by midwives, especially during the years 1918 and 1919. This decrease has also occurred in the practice of private physicians. There has been an increase in the number of deaths from sepsis in the cases attended in hospitals. This is explained, it is believed, by the educational propaganda regarding the children of all primipara and abnormal cases in hospitals.

### *Stillbirths.*

During 1919, midwives attended a total of 42,204 living and stillbirths; 41,876 living and 328 stillbirths, showing a stillbirth rate of .078. This is exceedingly low, as the obstetrical authorities state that the stillbirth rate ranges from two to five per cent.

### *Delinquencies of Midwives.*

During the year, 290 homes of midwives were reported as uncleanly; 208 midwifery bags were reported to be in an insanitary condition; 25 midwives were reported as personally unclean; 2 midwifery permits were revoked for cause; 5 midwives were arrested and found guilty as charged; one was sent to prison. Midwives registered 626 expectant mothers for prenatal care. The status for New York City in the control of the practice of midwifery is shown by the fact that representatives were sent to New York to observe our methods of control from Scotland, Dutch West Indies, New Zealand, and from many cities of our own country. A branch of the Welfare Department of the United States Government requested information as to our methods of control of criminal practice, stating that abortionists were leaving New York for practice in other cities.

## BUREAU OF FOOD AND DRUGS

During 1919, the work of the Bureau of Food and Drugs, in protecting the food supply of New York City, was vigorously pushed. The need for greater activity was caused by the fact that, during the first six months of the year, New York City was used, practically, as a port of debarkation. A large percentage of the home-coming troops were demobilized in the camps in the vicinity of New York City and this resulted in a continuous welcome to the troops, which had the effect of materially increasing, temporarily at least, the number of people in the City. The hotels were crowded and, as a result, the volume of food consumed in the City was greatly increased.

During the year 1919, in addition to the regular activities of this Bureau, we were called upon to assist in a number of special activities.

### *Drug Addiction.*

Owing to the enforcement of prohibition, it was feared that there would be a material increase in the number of persons addicted to the use of habit-forming drugs. A survey made in the spring of 1919, indicated that a number of physicians and druggists were illegally prescribing and dispensing narcotic drugs, and were doing it to increase and foster this habit.

In order to cope with this situation, the State Department of Narcotic Drug Control, which was charged with the supervision of the sale of narcotic drugs in New York State, cooperating with the Department of Health, adopted special rules and regulations for the City of New York, and the Commissioner of Health was designated as the agent of the State Department of Narcotic Drug Control. Under these rules, every person addicted to the use of cocaine or opium, or any of their derivatives, was required to register with the Commissioner of Health. The Bureau of Food and Drugs was placed in charge of this work. A registration office was established, which was opened in June, 1919, at 128 Prince street, Borough of Manhattan.

The regulations of the State Department of Narcotic Drug Control provided that a physician could not prescribe, and that a druggist could not dispense, cocaine or opium or any of their derivatives, to a drug addict, unless the addict could present an official Registration and Dosage Card issued by the Commissioner of Health of New York City. This card provided for the name and address of the addict; the sex; weight; height; age; race or color; color of hair; color of eyes; nationality; occupation; employer and his address; and other marks of identification. The card was signed by the Commissioner of Health, and the seal of the State Department of Narcotic Drug Control was affixed. A photograph of the addict was also attached on the upper right-hand corner of the card.

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Attached to the card was a monthly dosage sheet on which the physician prescribing the drug set forth the amount of drug prescribed, the kind of drug prescribed, and signed his name. Space was also left for the signature of the druggist who dispensed the drug. These dosage sheets were issued each month and it was necessary for the addict to appear in person, at the Registration Office, to obtain such dosage sheet. It could only be issued when the addict presented the dosage sheet for the previous month, showing that the narcotic drug had been obtained in a proper manner and that the physician attending the addict was prescribing drugs in accordance with the State and Federal Laws.

During 1919, 6,579 addicts were registered by this Department. Of this number, 5,047 were males and 1,532 were females.

The following is a table showing the age groupings of the addicts who registered:

Age Groups.	Male.	Female.	Total.
16 to 20 years.....	72	14	86
21 to 25.....	1,653	365	2,018
26 to 30.....	1,515	515	2,030
31 to 35.....	935	296	1,231
36 to 40.....	480	188	668
41 to 50.....	314	109	423
51 to 60.....	65	28	93
Over 60.....	13	17	30
Totals.....	5,047	1,532	6,579

A table is also submitted showing the racial groupings of the addicts who registered:

Racial Groups.	Male.	Female.	Total.
White.....	4,588	1,190	5,778
Black.....	454	342	796
Yellow.....	5	....	5
Red.....	....	....	....
Totals.....	5,047	1,532	6,579

In the early part of June, because of the activities of the State Department of Narcotic Drug Control, and the activities of the Police Department and this Department, a number of physicians who were illegally prescribing for drug addicts, temporarily discontinued prescribing to such addicts. As a result of this, their patients could not receive treatment, which caused the addicts considerable distress. In order to meet this situation, the Commissioner of Health opened a Narcotic Clinic where these addicts could

## BUREAU OF FOOD AND DRUGS

receive treatment pending their commitment to a hospital for treatment.

During 1919, there were 216,359 prescriptions filled at this Clinic, and 3,555 ounces of heroin and 1,125 ounces of morphine were dispensed.

During the year, 1,390 addicts were committed to hospitals for treatment.

### *Milk*

#### *Cost of Milk.*

The increased price of milk received considerable attention from the Department of Health during 1919, and this Bureau was called upon to conduct several investigations in connection therewith.

A survey was made by the Department of Health and, of 1,107 families, it was found that:

1,294 children were suffering from malnutrition.

993 children were suffering from anaemia,

785 children were under normal weight,

608 children were suffering from other disorders,

3,648 children were found to be under-nourished.

As a result of the agitation due to the increased price of milk, Governor Alfred E. Smith appointed a Fair Price Milk Committee for New York City, and the Commissioner of Health was appointed as Chairman of this Committee. This Bureau made a number of investigations for this Committee and representatives visited and reported on milk conditions in Philadelphia, Boston, Buffalo and Rochester. Surveys were also made by the Bureau, which information was used by the Committee in compiling its report to the Governor.

### *Amendments to the Sanitary Code.*

During 1919 the following amendments to the Sanitary Code were adopted:

*Wood Alcohol Poisoning*—Section 106, of the Sanitary Code, was amended so as to require every hospital, institution, or dispensary, to report immediately to the Department of Health the name, age and address of every occupant or inmate therein, affected with wood alcohol or wood naphtha poisoning.

This Section also makes it the duty of every physician to immediately submit a similar report to the Department of Health, relative to any person found by him to be affected with wood alcohol or wood naphtha poisoning.

*Proprietary and Patent Medicines*—Section 117 of the Sanitary Code, Regulating the Sale of Proprietary and Patent Medicines, was amended so as to conform to the objections raised by the Court of Appeals in Section 117, as originally adopted.

*Food; to Be Protected from Dust, Dirt, Flies or Other Contamination*—Section 142, of the Sanitary Code, was amended so as to provide that



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no candy, bread, pastry, or other bakery product intended for human consumption shall be kept, sold, offered for sale, or displayed, in any open window or doorway of a building, or upon any stand, or pushcart, wagon, or other vehicle in any street or other public place, unless such candy or bread, pastry, or other bakery product is separately wrapped in paper or contained in a cardboard box or other dust and flyproof wrapper or container.

*Poultry Slaughter Houses*—The regulations governing the approval of poultry slaughter houses were amended so as to provide that no site for a poultry slaughter house shall be approved by the Board of Health if it is located over 200 feet from the waterfront, or located within a radius of 200 feet of a church, school, library, hospital, sanatorium or other public or private institution, or it is located within 100 feet of a dwelling, tenement house or apartment house.

*Shellfish*—Section 171 of the Sanitary Code, regulating the sale of adulterated or misbranded shellfish, was amended so as to provide that "shellfish shall be deemed to be adulterated, if, after removal from the shell, they are cleansed in fresh water or water of a lower salinity than the water in which they are grown."

### *Staff of Bureau.*

In the Budget for the year 1919, there were practically no changes in the personnel of this Bureau, the personnel of the Bureau being as follows:

Director .....	1
Assistant Director .....	1
Chiefs of Divisions.....	6
Inspectors of Food.....	100
Sanitary Inspectors .....	15
Veterinarians .....	8
Chemists .....	10
Laboratory Assistants .....	5
Clerks .....	20
Stenographers and Typewriters.....	4
Typewriting Copyists .....	3
Helpers .....	2
Laborer .....	1
<hr/>	
Total .....	176

There were practically no changes in the organization of this Bureau during 1919, the organization being as follows:

- (a) Executive Office,
- (b) Borough Offices.

*Executive Office*—The functions of the Bureau of Food and Drugs were directed and supervised through the Executive Office.

## BUREAU OF FOOD AND DRUGS

The following functions: (1) Milk Supply, (2) Oyster Supply, (3) Sale of fraudulent patent and proprietary medicines, (4) Chemical Laboratory, were under central control, and were directed from the Executive Office.

*Borough Offices*—In each Borough of New York City, a Division of Food and Drug Inspection is maintained under the supervision of a Borough Chief.

Their function is to supervise and inspect all food establishments excepting such as are under Central Control.

### *General Scope of Work of the Bureau.*

As previously reported, the work of the Bureau was organized and supervised with the idea of placing emphasis on the more important phases of the food and drug supply.

In laying out any of the work of this Bureau, we always have before us the following scheme in which the work is laid out in its relative importance, and we concentrate according to this arrangement of the work.

*First*—The inspection of food in its raw state at points of entry, such as railroad terminals, piers and wholesale markets.

*Second*—The inspection of the factories where food products are manufactured from the raw materials.

*Third*—Inspection of bakeries, restaurants and hotels.

*Fourth*—Exclusion of diseased food handlers.

*Fifth*—Inspection of retail stores.

### *Food Standards.*

During the past, this Bureau has been handicapped to a great degree by the lack of standards for many essential foods. The necessity for standards controlling ice cream was forcibly brought to mind by the results of investigations by inspectors of this Bureau, which showed that ice cream sold in the City was adulterated; that it contained glue, and that the gelatin used contained heavy poisonous metals.

Prosecutions could not be instituted owing to the fact that the amount of poisonous metals found were in such quantities that it was almost, if not impossible to secure expert testimony as to its deleterious effect upon the human system. Some twenty court cases were held pending during the year for this reason.

One hundred and twenty-one samples of ice cream were drawn from the different factories and it was found that the butter fat in this product ranged from 1% to 10% milk of butter fat. This ice cream was sold at a wholesale price of from 35 to 50 cents per quart when sold loose. When sold as "brick ice cream," 5 to 10 cents per quart was added. In cases where this ice cream was sold in conjunction with ice cream sodas, the price

averaged 90 cents per quart. In a great many cases, ice cream sold to the public was found to contain corn starch or other fillers, to the exclusion of milk products. Although these products were not of a harmful nature, nevertheless, it was misleading and fraudulent. The wide variance in the butter fat content showed that the term "ice cream" was misleading and a fraud was being perpetrated upon the public—for the price paid did not control the quality of the article dispensed.

This Bureau, after conference with large and small manufacturers of ice cream and gelatin, after consulting reports of other states and cities as well as the United States Bureau of Chemistry and independent research work and investigations, decided upon a standard for ice cream and gelatin, and incorporated said findings in a report recommending the adoption of two new sections of the Sanitary Code. This is only a preliminary in the step to have food standards adopted for all essential foods in the City. This is one of the most important activities that this Bureau can engage in, and it is contemplated that, during the coming year, considerable time will be given to this.

#### *Milk Inspection.*

*Milk Strike*—The dawn of the new year brought to our City its second milk strike within less than three years. It was caused through the demand of the Dairymen's League that the producers be paid \$4.01 per 100 pounds of milk containing 3 per cent. of butter fat, and the refusal of the various dealers, through the New York Milk Conference Board, Inc., to pay more than \$3.60 per cwt. The regular producers began to withhold their milk on January 1, 1919, and most of them continued to do so until January 18, 1919, inclusive, when the local fluid milk dealers and the condensed milk interests capitulated, and agreed to the terms of the dairymen. It was not until January 21, 1919, however, that the City was receiving its complete supply from the usual sources.

During the strike period, the dealers, in their endeavor to maintain their businesses, and to supply the public with the milk it actually needed, drew upon every available supply. As a result, milk was shipped from Philadelphia, Baltimore, Harrisburg, Pittsburg, Cleveland, Chicago, Boston, etc., and from smaller cities and towns, which, ordinarily, diverted their produce to the larger cities mentioned. Before any of this "foreign" milk was permitted sale in New York, the Department received telegraphic assurances from the City which supervised its production and handling, that it was produced and handled in accordance with the rules and regulations of that particular City. As a further safeguard, all of this emergency supply was ordered shipped to this City labeled, "To be Pasteurized," and was pasteurized, under the supervision of a representative of this Bureau, in one of the approved plants. The usual force was augmented by inspectors assigned from the several borough offices, and, in this way, one or more

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inspectors were assigned to each pasteurizing plant in the City, during the hours of operation. Careful supervision was also maintained at the railroad terminals to see that all milk labeled "to be pasteurized" was forwarded to a pasteurizing plant for treatment, before being offered for sale.

*Reconstituted Milk and Cream*—The manufacture and sale of reconstituted milk by the New York City Department of Farms and Markets has been discontinued at both locations where this product was prepared during 1918. A company, located at Richmond Hill, Borough of Queens, arranged an ideal milk plant and began the manufacture of reconstituted cream, their sales being made mainly among the sour cream dealers. Two or three other small dealers were also granted permits to manufacture and sell this product, but, upon finding themselves unable to compete successfully with the rest of the sour cream trade, the business was abandoned. and attention turned to the manufacture and sale of a product, the ingredients of which included vegetable oil, usually cocoanut butter.

*Checking Work of Veterinarians*—As indicated previously, one of the veterinarians attached to this Division, was detailed to the physical examination of cattle, and the checking of tuberculin test charts with the cattle themselves, at the ninety dairies located within the City limits, up to March 24, 1919. During the period from January 1, 1919, several lots of cows were embargoed by him until they were properly ear-tagged, and otherwise positively identified by the veterinarian who tuberculin-tested them before shipment. Two lots of cows, comprising 29 head, were held up because of apparent irregularities in the original test. Upon the retest, only one reactor was found, and the others were released for sale. In one shipment of 42 cows from Cortland, New York, it was found that six animals which had reacted to the test, were included. These were embargoed, the facts presented to the Federal Bureau of Animal Industry, and the animals in question slaughtered under federal supervision.

*Country Milk Efficiency and Economy*—As in the previous year, arrangements were made with the General Passenger Agents of the various railroad lines in the New York City milk shed, to have issued to each country inspector special permission to ride on milk and freight trains. More than ever before, it has been realized that this a contributing factor to efficient milk inspection in the country.

*Milk Surveys*—During the year, several milk surveys were made, by means of which the exact amount of milk arriving on one night at the various railroad platforms and terminals, for sale in Greater New York, was determined. The minimum amount was found to be 1,794,058 quarts, while the maximum was 2,088,632 quarts.

*Milk Temperatures*—The Winter of 1918-1919 was unusually mild and, as a result, the ice crop was light, and of poor quality in general. Dairymen, milk distributors and milk-carrying railroads were all handicapped, and obtained either an insufficient supply of ice or none at all.



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Because of the unfavorable winter, it was realized early in the summer that complete compliance with the official cooling regulations could not be obtained without excluding at least 60 per cent. of the normal milk supply. thereby bringing on a milk famine, and directly endangering human lives.

After a conference with officials of the New York Milk Conference Board, Inc., and the Dairymen's League, Inc., it was decided that up to, and including, September 30th, 1919, the cooling standards in the country and city would be raised five degrees: i. e., the "A" milk in the country could be accepted at a temperature of 55 degrees Fahrenheit; the "B" milk in the country at 65 degrees Fahrenheit; and all milk in the City could be offered for sale at a temperature as high as 55 degrees Fahrenheit. The Bacteriological Standards, however, remained unchanged, and were enforced as if no leeway had been allowed in the temperature standards.

*Milk Exposition*—The second annual exposition of milk, milk products, milk-handling apparatus and machinery was held in the 71st Regiment Armory during the week beginning April 21st. The attendance was large and the exhibits were not only interesting, but extremely educational. This Department, in addition to showing its usual milk data, charts, photographs, and the like, conducted a laboratory booth, wherein were shown the official methods of testing milk and cream for chemical and bacteriological content. The departure created considerable interest and favorable comment.

*Efficiency of Pasteurizers and Flash Pasteurization*—During the year, time, color and temperature tests were conducted on several of the continuous pasteurizing outfits in the country plants. At most of these, it was determined that the holding period was less than the required 30 minutes. As a result, larger apparatus was installed in some instances. In others, a third holding tank was added; and in still others, the milk pump was regulated so as to force less milk through the holders.

Flash pasteurization of milk was detected on several occasions during the year by the country inspectors: i. e., they found the milk being heated to 142 degrees Fahrenheit or higher, and then being cooled without any holding whatever, or, possibly, for from five to fifteen minutes only. Among those places where this violation was noted were Bridgewater, New York, Leonardsville, N. Y. and Burdick's Crossing, N. Y. In all cases, such milk was embargoed upon arrival in New York City, and was denatured or manufactured into butter and cheese under the supervision of the inspectors.

*City Pasteurizing Plants*—The city pasteurizing plants were found, on the whole, during the year, to be in satisfactory condition: that is, properly equipped and operated. However, dirty piping, apparatus, cans and bottles were found upon occasions. In all such instances, it was the policy to hold up the entire process of milk-handling at the offending plant until the dirty apparatus or utensils were suitably cleansed.

The help at these pasteurizing plants is strongly unionized and, natur-



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ally, the delays caused in the manner referred to above, in many cases, meant overtime and payment of wages one and one-half times the usual rate.

*Prosecutions*—The usual attention was directed to the detection of violations of Section 159 of the Sanitary Code (dirty empty containers), and Regulation 144 (transferring milk on the streets); also to the misbranding of milk and milk products, as set out in Section 139 of the Sanitary Code.

*Miscellaneous*—On October 11, 1919, the harbor strike practically tied up all ferry service from the State of New Jersey to this city, with the exception of the boats operated by the Delaware, Lackawanna and Western Railroad. As might be surmised, there followed a tie-up of part of our milk supply, which, eventually, necessitated the re-routing of milk trains whose terminals were located in the State of New Jersey, either over the New York Central Lines via the Poughkeepsie Bridge, or over the Pennsylvania Lines, through the North River Tunnels. With the exception of the first day, the shortage of the milk supply was negligible, but, naturally, there was considerable delay during the strike period. On November 1st, it was expected that the threat of the milk wagon drivers to strike would be carried out. However, through the efforts of Governor Smith, the difficulties were arbitrated, concessions made by the milk dealers and the union members, and a two-year agreement consummated.

Enforcement of milk standards resulted in the following:

Degrading Grade "B" Plants .....	71
Degrading Grade "A" Past. Plants .....	6
Degrading Grade "A" Raw Plants.....	4
Excluding Grade "B" Plants .....	79
Excluding Grade "A" Past. Plants.....	1
Resumed on Probation (all sources).....	103
Degrading order enforced, while on probation.....	14

### *Oysters and Other Shellfish.*

During 1919, this Bureau enforced the law and the regulations governing the sale of shellfish in this city, especially oysters. Sections 164 and 171 of the Sanitary Code regulate the sale of oysters and prohibit the sale of oysters which are adulterated or misbranded. All wholesale dealers in oysters, local planters, and retail dealers receiving direct shipments from out of town sources have proper permits. Numerous new permits were issued and revoked for proper causes, and several applications for permits were denied for failure or inability of the applicants to procure suitable credentials from the Conservation Commissions and the Boards of Health of this and other States.

*Jamaica Bay*—It is estimated that over 300,000 bushels of oysters were planted in Jamaica Bay during the year. Young oysters or "set" were scarce and high priced and, therefore, larger oysters, in greater number than ever

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were planted. The bulk of the "sets" came from the waters of Long Island Sound.

The regulations governing the sanitary and insanitary zones, as established by the United States Government, were enforced. A patrol of Jamaica Bay was maintained between April 15th and December 1st, and oysters sold during the interim were floated for at least seven days in an approved area. Hassock, John's and Garrettson's Creeks, and Mill Pond, were approved areas during the year. Approval of these areas, except Hassock Creek, was withdrawn for several weeks in August.

A mussel "set" in Jamaica Bay during the summer caused considerable expense and annoyance to the oystermen.

A sanitary survey of the Bay was undertaken and the systematic recording of every public and private sewer, cesspool, privy and dwelling house was begun. The number and character of the vessels regularly plying the waters of the Bay and their sanitary accommodations were reported on. The taking of a census to determine the population on the bars, marshes and islands within the Bay was inaugurated. All of the sewage disposal works were visited and the treatment and character of the effluents observed. The temperature, salinity and appearance of the waters over oyster fields, and unusual tidal conditions, were recorded.

During the time the Bay was patrolled, the throwing of garbage and the commission of other nuisances were abated by personal effort. Hundreds of samples of Bay water and oysters were submitted for laboratory tests. The results show that this body of water is dangerously polluted—the laboratory data are substantiated by the sanitary inspection. Millions of gallons of raw sewage discharge daily in close proximity to intensively cultivated oyster grounds. Large quantities of oysters from this Bay were consumed in a raw state during the summer season.

Oysters grown in Jamaica Bay are prohibited for sale in this city between April 15th and December 1st, unless transplanted in an unpolluted area approved by this Department.

The Federal ban on inter-state shipments was lifted November 28, 1919.

During February and August considerable publicity was given Jamaica Bay oysters. Two oystermen instituted civil actions in the courts against a dye manufacturing concern, alleging that their oysters were colored with dyes and rendered unsalable. The oystermen were awarded \$24,500. Appeals from these decisions are pending in the courts.

A plant for treating oysters electrically was established and maintained on Ruffle Bar for about four months. The output from this plant was kept under observation, and 156 pounds of oyster meats condemned. This plant discontinued operations.

*Raritan Bay (Princess Bay)*—More than a million bushels of oysters are growing on intensively cultivated beds in Raritan Bay. Rough stock

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and seed are used and, therefore, a goodly percentage are shells. The restricted zones, including Great Kills Harbor, were kept under observation. All except a few planters have discontinued placing oysters in the insanitary zones. Clams are planted instead, and some of the bottoms are disused.

The oysters marketed from some of the beds during the summer had a distinct petroleum odor. Investigation revealed that oil tankers returning to this country in ballast pumped oil and unclean water in close proximity to the shellfish bearing areas.

Large shipments of oysters from this Bay were made in interstate commerce. Shell oysters in carload lots were forwarded to the Pacific Coast and planted in San Francisco Bay, for storage purposes. Nearly all shipments were culled and prepared in Fulton Market. Numerous samples of oysters were submitted for laboratory tests. Sanitary inspection of this Bay shows its waters are polluted. Large quantities of oysters from this Bay were consumed in a raw state during warm weather.

*Out of Town Oysters*—Samples of shellfish from every oyster growing section on the Atlantic Coast, from Prince Edward Island, Canada, to Florida, shipped into this market, were submitted for laboratory tests.

A sample of dried and smoked oysters from China was procured in this market. Canned oysters of the so-called "cove" variety from Maryland, South Carolina, Georgia and Florida were also sampled. A small percentage of these oysters are consumed in the city, the balance being sent West in the United States and for export to the West Indies and Europe. A sample of dried oysters (oyster powder), manufactured in Virginia, was delivered to the Chemist for examination.

A new preparation, called "clam concentrate," and consisting of clams and oysters in the form of a jelly, was placed on the market this year. This preparation is preserved with one-tenth of one per cent. of benzoate of soda and is manufactured at Asbury Park, New Jersey. Samples were procured to determine if same were legal.

*Adulteration of Oysters by the Addition of Water*—An investigation of oysters which are "tanked," "washed" and "blown" was instituted in January and a separate report forwarded showing that oysters are adulterated by the addition of water. Paragraph 7 was added to the regulations adopted under Section 171 of the Sanitary Code, in order to prevent this adulteration. Salt is now used by the oystermen in the fresh water of the "blow tanks," in order to comply with the law.

*Quantity of Oysters Marketed*—In round numbers, about one million bushels of oysters were sold and consumed as food in this city. More than 165 persons and corporations shipped oysters into the City of New York.

Oysters were shipped from 33 different bays and harbors on the Atlantic Coast, actually determined from tags removed from containers arriving in this market.

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*Clams, Mussels, Scallops*—The sale of clams, mussels and scallops is not regulated by this Department in the same manner as oysters. There is abundant proof in literature that clams, mussels and scallops are liable to become agents in the spread of disease. Forty samples of clams were procured for bacteriological examination.

Approximately 48,000 bushels of mussels were delivered and consumed in this city. Mussels grow naturally on Rockaway Bar and Long Island Sound, and are cultivated in the waters of Cold Spring Harbor. Three samples of mussels were submitted for laboratory tests.

### *Terminal Inspections and Wholesale Markets.*

*Borough of Manhattan*—Owing to the general unrest of labor after the close of war and during the past year much attention was given to the piers and terminals, due to the many strikes called by the labor organizations covering the longshoremen, drivers, express employees, etc., so that considerable time was given to the chief points of entry of foodstuffs. Although in some instances large quantities of food were held on the piers, there was comparatively no spoilage, which was probably due to the previous effective work of the terminal squad. The shippers were particularly careful to have the shipments come through in good condition, due to the increased cost of transportation, as well as increased cost of material and labor, because the seizure and destruction of the goods at this market would cause a heavy financial loss.

Resultant of this state of affairs, there has been considerable improvement in the quality and the conditions of the foodstuffs received at this Port, so that, where normal conditions surrounding the shipment prevailed, the food arrived in good condition. Wherever shipments were received which consisted, in part, of decomposed or spoiled food materials, every effort was exerted by the inspectors to prevent the loss of the sound material contained in the shipment, and in these efforts we were particularly successful in preventing waste, the incentive being that the materials were worth such a large amount of money that it was well worth overhauling the shipment. This reconditioning process was always carried on under the immediate supervision of an inspector, so that none of the spoiled materials would enter into the commerce of the city.

During the strike situations referred to, when no deliveries of perishable foods were being made, it was our purpose and desire to have such perishable foods released so that deliveries were made under the supervision of an official of this Department, and the work was carried on in such manner that the strikers were not antagonized and were shown the necessity for taking such action. This procedure prevented a considerable loss of money to the shipper and also released for delivery large quantities of perishable products to the consuming public. For instance, on June 23, 1919, during the strike of the Teamsters' Association, when deliveries of perishable commodities were



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prohibited by the Union, a large shipment of berries, worth considerable amount of money, was undergoing spoilage on the pier of the Hudson Navigation Co., Pier 24, North River. Through the efforts of the representative of this Division, permission was obtained from the strikers to permit the delivery of this material, so as to prevent a complete loss. Unfortunately, however, due to adverse weather conditions, the fruit was unsuitable for the general market requirements and was, therefore, diverted to food manufacturing establishments, owing to its being dead-ripe, and necessitated quick action to prevent the entire loss.

In several instances, large shipments of oranges and lemons were located on piers, and which had been abandoned by the consignee on account of the spoiled food being in such a percentage, and the market being unsuitable and unprofitable for them to overhaul the shipment. Instead of destroying the entire lot, we were successful in our efforts to obtain these shipments, so that the sound portion thereof could be used in the hospitals of this city, with no cost to the City for good, wholesome fruit. In carrying out this work, we were not only successful, therefore, in preventing the destruction of sound material, but were also successful in distributing large quantities of fruit to the City Hospitals.

These activities also applied to the inspection of foodstuffs at the various wholesale markets, with the exception that, at the wholesale establishments, the inspectors were particularly keen to observe the conditions surrounding the food materials, generally, and in several instances, especially with the large packers, spoiled meats have been found in their possession and under such circumstances as to indicate that, if the inspector had not found such material, it would have been sold to the retailer and ultimately to the consumer. In every instance where such materials had been found, a recommendation has been made that the offending dealer be prosecuted.

It was also a pleasure to co-operate with the representatives of the United States Army in having the inspectors visit the piers and wholesale markets in company with officers from the Quartermaster's Department, with the idea of showing them our methods of terminal inspection, and so that they may be fully acquainted with the food inspection service and to increase their knowledge of foodstuffs.

*Borough of Brooklyn*—The Borough Chief, Borough of Brooklyn, reports the following: Despite our efforts for conservation, instead of condemnation of foodstuffs, consignees have refused to overhaul partly damaged or deteriorated consignments, which resulted in a total loss of same. Their contentions were that market and labor conditions did not warrant their paying for overhauling. In some instances, all they derived was the rebate of the duty; and in other instances, the discharging of cargoes onto unheated and improperly protected piers, or the shipping of perishable goods in unrefrigerated ships, caused rapid deterioration.



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### *Factory Inspection.*

The Borough Chief, Borough of Manhattan, reports as follows: As previously indicated, the food factories of this Borough were inspected at regular intervals, with the view to ascertain the quality of foods used in the products manufactured, as well as the sanitary conditions surrounding such manufacturing processes.

It is worthy of notation to report that the great majority of factories in this Borough are operated by individuals and corporations who seem to make every effort to comply with the laws.

In a number of instances, however, it was found that the unscrupulous dealers were taking advantage of the public by using decomposed, spoiled or otherwise unfit food materials in the manufacture of products sold by them. Through the excellent work of inspectors assigned to this detail, we were successful in locating a number of such dealers, and in each instance where the spoiled material was found to be used in the manufacture of food, the facts were forwarded with the recommendation that the dealer be prosecuted.

A special investigation was also made early in the year to determine if the product called "avizol" was being used in the manufacture of hard candy. This investigation revealed the fact that, in some of the candy factories "Avizol" was being used, and samples of the product manufactured by the concerns were procured and submitted to the Chemical Laboratory for analysis, where it was found that the candies contained sulphurous acid, an added preservative, and the products therefore sold in violation of Section 139 of the Sanitary Code. The facts were submitted to the Advisory Committee for an opinion as to the injuriousness of the product "avizol," and it was their opinion that it is a deleterious substance and should be prohibited in food products, especially those used by children. In view of this opinion, the candy manufacturers were notified to immediately discontinue the use of "avizol," and subsequent reinspections made failed to reveal that any manufacturer was continuing its use.

The Borough Chief, Borough of Brooklyn, reports as follows: The knowledge gained by the observation of methods in the visiting of the various kinds of factories and the imparting of same on subsequent visits to other factories, has tended to correct many slipshod methods in the handling and care of foodstuffs, which resulted in great conservation.

At a large jam and jelly manufacturing plant there were found 5,050 pounds of fruit pulp unfit for human consumption. Upon previous inspection of these premises, the inspector noted that their arrival was heralded throughout the building by means of buzzers, telephone calls from floor to floor and, subsequently, the two inspectors entered from different parts of the building, one going direct to the cooking room and the other to the office.

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The one going to the cooking room reached there in time to see this unwholesome food, which was about to be removed from the cooking room upon the receipt of message from the office. The said message was overheard by Inspector. Prosecution resulted in a fine of \$100.

At a large factory dealing in farinaceous foods, the inspectors observed the packing of unsound ground tapioca in one-pound packages for the retail trade. The entire amount, mouldy and dirty tapioca (89,600 pounds), was condemned as unfit for human consumption, prosecution was instituted and the case is now pending in Court, as the firm in question has hired the most expert testimony in the city to testify that mouldy and dirty tapioca is fit for human consumption. Notwithstanding this testimony, the present indications are that the Court will impose a substantial fine on this corporation.

At the premises of a candy dealer catering to peddlers who peddle candy in the neighborhood of public schools of the city, there were found 900 pounds of chocolate-covered candy which, upon examination, was found to be wormy. Prosecution resulted in a fine of \$250 and a threat from the Court that he intended to impose a jail sentence.

Upon examination of pie sold at a large restaurant, it was found that ingredients used were not up to the standard. Investigation was continued at the large wholesale pie bakery concern supplying this restaurant, and there was found a tub of mince pie filling ready for the oven and 1,485 pounds of wormy raw fruit, said fruit containing water bugs and cockroaches. Prosecution resulted in a fine of \$500.

At a large wholesale chocolate candy manufacturer, 2,400 pounds of wormy and weevily corn flakes were found. Said firm makes a speciality of manufacturing a cheap chocolate-covered cocoanut bar. Prosecution resulted in a fine of \$500. Evidence indicated the firm was scared and endeavored to sell same to another manufacturer prior to its being found on their premises.

At a number of the cheaper grades of candy factories there was found in use, in the manufacture of hard candy, a product of which the active principle is sulphurous acid. The said product, after investigation by the Department of Health's Medical Advisory Board declared it to be injurious to health, especially that of children.

### *Bakery Inspection*

The Borough Chief, Borough of Manhattan, reports the following: Bakeries of this Borough are under continued surveillance, both to determine the quality of foods used in the manufacture of products and the sanitary conditions of the bakeries. Although the bakeries have been under a sanitary certificate for a considerable length of time, it appears from the reports of inspection, that many do not view the requirements of the State Labor Law and of this Department with the proper attitude: that they

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could and should maintain their bakery in a clean and satisfactory manner.

Attention is also given to the exposure of food products in bakeries as to contamination, due to its being uncovered and unprotected from dust, dirt and unwarranted human handling. Wherever such violations are found, it is the duty of the inspectors to instruct the operator of the establishment as to the requirements concerning Secion 142 of the Sanitary Code, and where the dealers fail to readjust their business methods to meet the requirements of this Department, a summons is served.

Periodical night inspections of bakeries are made for the purpose of examining the eggs used in the manufacture of cakes, etc. This activity is of especial importance, in view of the present high cost of eggs and the incentive of unscrupulous dealers to use decomposed eggs in their products. The results obtained from this activity have been very satisfactory. These night assignments are beneficial in that they have a moral effect upon the bakers.

The Borough Chief, Borough of Brooklyn, reports the following: Special attention has been directed to the use of substitutes of non-food value for food value product in the manufacture of cakes and breadstuffs. In addition, the question of investigation as to the use of petrolatum in shortening for shortening of food value, was taken up. In these investigations, in two instances the use of saccharin, a coal-tar product of no food value, was found being substituted for sugar which is of food value, in the manufacture of charlotte russes. Prosecution was instituted in the said instances and cases are pending.

### *Restaurant Inspection*

The Borough Chief, Borough of Manhattan, reports the following: Restaurant inspection is considered one of the most important activities, as it deals direct with the public. Considering the fact that foods at the present time are extremely high in prices, there is every incentive for restaurant operators to buy and serve food of a questionable character. The inspectors, therefore, are very diligent in carrying out this detail to make sure that the food found in the restaurants is sound and wholesome in every respect. Wherever unsound food is found, the facts are forwarded for the attention of the Court.

Special attention is also given to the general sanitary conditions of the establishment, and every care is taken to see that the glasses and utensils used in the service and preparation of food are thoroughly cleansed after each use. Upon inspections made, it appears that some of the dealers do not pay proper attention to the requirements of the washing of drinking glasses, and wherever such conditions are found, a summons is immediately served.

In keeping with this activity, it is our desire, wherever possible, to cause the dealers to install the use of individual drinking cups.

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Upon inspection of restaurants, special attention is also given to see that each food handler possesses a card of physical examination declaring him to be free from an infectious or communicable disease. Wherever it is found that the food handler does not possess such card, a reference is immediately forwarded to the Bureau of Preventable Diseases for their attention.

The Borough Chief, Borough of Brooklyn, reports the following: In this character of establishment, especial attention is directed to the quality of foodstuffs at premises, and to the sanitary conditions surrounding the preparing and handling and sale of same.

In addition, special attention is also given to the proper cleaning of utensils and to the food handlers employed thereat being in possession of Department of Health medical cards. Also, that foodstuffs displayed thereat is properly protected to prevent contamination due to unwarranted human handling or expose to dust, dirt or other offensive matter.

The Borough Chief, Borough of The Bronx, reports the following: All of the restaurants situated in the public schools in this Borough were inspected and put under permit. Some of these establishments were operated by private individuals and were found to be in a general insanitary condition and it was found necessary to communicate with the Department of Education to obtain compliance on many of the violations found. Conditions that required structural alterations were attended to by the Department of Education.

### *Retail Inspections*

The Borough Chief, Borough of Manhattan, reports the following: The work of the district inspector relates chiefly to the inspection of retail food establishments such as groceries, butcher shops, bakeries, confectioneries, restaurants, fish stores, etc., for the purpose of determining if the quality of food held in these various establishments conforms with the requirements of this Department, and to note also the sanitary conditions under which they are handled. It is the duty of the district inspector to report to the office, immediately, whenever spoiled foods are found in such a condition as to indicate that they have been recently delivered by a wholesale dealer or distributor, so that a reinspection may be made at once at the point of delivery and so prohibit further distribution. Whenever it is found that the point of distribution is located outside of the jurisdiction of this Division, a reference is forwarded at once to the Borough in which the wholesaler is located so that they may take proper action.

In a great majority of the retail stores, the quality of food handled is usually found to be up to the standard. In a few instances, considering the large number of retail establishments, spoiled foods have been found on sale, and whenever such is the case, a recommendation is made that the dealer be prosecuted.



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There has been considerable improvement in the sanitary condition of establishments since the work has been arranged so that the district inspector can concentrate upon establishments of this character.

The Borough Chief, Borough of Brooklyn, reports the following: A greater percentage of condemnations at retail establishments consists of swelled canned goods because it is necessary, under the present system of doing business in this line, that the retailer holds said canned goods until the representative of the wholesaler sees same. Steps have been taken by the Department to eliminate the necessity on the part of the retailer to do this, and to arrange some system whereby they could, immediately upon finding swelled canned goods, destroy same and be rebated on a percentage basis for amount received, or some other method devised whereby the possibility of prosecution for unsound goods would be minimized.

The Borough Chief, Borough of The Bronx, reports the following: Although, in a great majority of instances, cooperation was obtained from the storekeepers and sanitary conditions improved where warnings were given by inspectors, it was found necessary, in 215 instances, to serve summonses as a result of dirty stores. The fines imposed in these cases amounted to \$920.50.

On 254 cases prosecuted during the year as a result of foodstuff condemned (unsound eggs included) which cases resulted in fines totaling \$3276.00 being imposed, a great majority of such cases were a result of unsound food being found in retail stores. Only in instances where there is some reason to believe that such unsound food was to be sold, were such cases taken to Court.

The Borough Chief, Borough of Queens, reports the following: The inspection of retail stores is capable of being reduced to a routine proposition and while the work is not neglected in the inspection of these stores, it is not rated on the same plane of importance with that of the factory, bakery and restaurant inspection.

### *Meat Inspection*

The Borough Chief, Borough of Manhattan, reports the following: Specially trained and qualified inspectors were detailed to make inspections and thorough examinations of carcasses and parts thereof which arrive in the City. Whenever meat is received which is apparently diseased, or of a questionable character, which requires the opinion of a technical expert, a veterinarian who is also assigned to this squad of inspectors is called upon to make his examination and dispose of the questionable material.

The Borough Chief, Borough of The Bronx, reports the following: During the latter part of the year, particular attention was directed to the inspection of hogs on the twenty hog farms in this Borough, with the result that on three farms, cases of hog cholera were located. On all of these



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farms, quarantine was immediately established and daily inspections made until disease had disappeared.

As a result of this outbreak the veterinarian condemned 109 of these hogs, weighing 2900 pounds. Hog cholera serum, which was injected under the direction of this veterinarian, resulted in the saving of many of these animals.

### *Food Adulteration*

The Borough Chief, Borough of Manhattan, reports the following: Owing to the scarcity of imported pure olive oil, many of the dealers, especially those of the foreign element who deal in canned oils and make a business of filling cans of oil, resorted to the practice of using cans which were so labeled and marked as to convey the impression to the purchaser that the oil contained within the cans was imported pure olive oil, whereas, upon analysis, it was found that the oil was not pure, but was a compound consisting of a greater portion of cotton seed oil, and, in some instances, sesame oil: thereby perpetrating a fraud upon the public in that the oil was sold at a price far above that which should be charged for compound oil, and also in giving the impression that it was imported olive oil, when, in fact, it was not. We were successful in forwarding the facts in a number of instances of this character so that the facts could be brought before the attention of the Court. In each of the cases tried, thus far, the Court has imposed a substantial fine.

An investigation was also made to determine if ground coffee contained cereals, chickory or other adulterants. This investigation revealed the fact that several of the dealers were selling the adulterated article as being the pure ground coffee, and, in each instance, a recommendation was made that the concern be prosecuted.

An investigation was also made concerning the sale of so-called egg substitutes. It was found, as the result of this investigation, that preparations of this type do not enjoy any extensive sale in this City. From information obtained, it appeared that the product sold as egg substitute did not produce satisfactory results in baking, which probably accounts for the unpopularity of the preparations of this type.

In several instances, it was also found that pure dried eggs were sold under misleading conditions, in that statements were made on the label or other printed matter, indicating that a certain quantity of the egg would produce the same results as a given quantity of shell eggs. From the facts obtained from the Federal authorities, as to the egg standards, hearings were given the distributors of this misbranded product and, in each instance, the labelling was corrected so as to conform with the requirements of this Department.

This is also true of a sample of powdered milk which was so worded

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as to convey the impression that a given quantity of powdered skimmed milk would produce a certain amount of liquid milk. Needless to say, this was misleading in that skimmed milk powder can only produce skimmed milk when mixed with the proper proportion of water and, therefore, the product was considered misbranded within the meaning of the Sanitary Code provisions. A hearing was held which resulted in the dealer correcting and modifying the printed matter, so as to conform with the legal requirements.

An investigation was made to determine if a high grade technical glue was being sold as food gelatin. This investigation revealed the fact that this fraud is being practiced, and in one instance, we were successful in obtaining samples of so-called food gelatin from a concern who buys nothing but glue. The samples are now at the Chemical Laboratory awaiting analysis.

The Borough Chief, Borough of Brooklyn, reports the following: Olive oil dealers were found, in numerous instances, adulterating pure olive oil with cotton seed oil. Prosecution was instituted.

Beverage dealers, in many instances, were found labelling their product so as to deceive or mislead the purchaser: i. e., in that said label did not specify that the article in question had been artificially colored or flavored, or that article in question was a compound, imitation or blend. Said condition was corrected by summoning dealer to the office, which resulted in correction of label.

Egg substitute dealers were found to be labeling their product either with a picture of a hen or eggs, or wording purporting that same contained eggs, whereas, as a matter of fact, the same did not. Said conditions were corrected.

### *Exposure of Foods on Streets.*

The Borough Chief, Borough of Manhattan, reports the following: With reference to Section 142 of the Sanitary Code, I would state that the inspectors paid particular attention to the exposure of food within establishments where such food was exposed to contamination and unwarranted human handling. It is the policy of this Division to give a warning and instruct the operator of the establishment as to the requirements of this Department. After reinspections had been made and no apparent efforts exerted by the operator to remove the violations or modify his business methods so as to have the establishment conform with the requirements of this Department, a summons was served.

### *Cleansing of Utensils.*

The Borough Chief, Borough of Manhattan, reports as follows: Particular attention has been given by the district inspectors, and from time to time by special squads, to the requirements of Section 144 of the Sanitary

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Code, which provides that utensils used in the service of food or drink should be properly cleansed after use. This code section is considered by us to be one of the most important in that improperly washed utensils, which have been subjected to contamination by the use of a person suffering from a contagious or communicable disease, is of utmost importance to the general public welfare; therefore this special attention. Unfortunately, however, the Magistrates do not view this important requirement with the proper attention, in that inadequate fines are usually imposed, so that food dealers who have been served with a summons and upon appearing before the Court, find that they only have to pay a small amount of money and are not impressed with the necessity of properly observing this important code section.

### *Prosecutions.*

The Borough Chief, Borough of Manhattan, reports as follows: A number of important cases have been forwarded against various food dealers charged with having violated Sanitary Code Sections. In presenting these cases at Court, the inspectors have given their testimony in such a manner that, in many instances, it was necessary for them to qualify as experts before important facts surrounding the case could be given; and as a result of this training, in very few instances did we have acquittals of any important case.

With reference to the enforcement of minor code sections which are disposed of in the Magistrates' Court, I would state that the inspectors have been particularly active in bringing to the attention of the Court all flagrant violations. Unfortunately, however, the Magistrates do not view these code sections with sufficient importance so that, in a great many instances, our activities along these lines do not produce very satisfactory results.

### *Co-operation.*

The Borough Chief, Borough of Manhattan, reports as follows: It has been our policy to co-operate with all other food, drug, police and other City officials so as to co-ordinate our activities and prevent, as far as possible, a duplication of inspectorial work, and so as not to interfere with investigations being carried on by other official bodies.

As examples of the co-operation with the Federal authorities, I would report that, at their request, a number of seizures of adulterated scallops and other foodstuffs were made. This activity prevented the distribution of food which did not conform with the Federal requirements.

Co-operation was also obtained with the U. S. Department of Agriculture which carries on a study of plant disease. This statement applies especially to several large shipments of tomatoes which arrived in this City in an extremely poor condition and which presented an unusual appearance.

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A study of this condition by the Federal authorities, at our request, resulted in the statement that the tomatoes were affected with a peculiar disease, and they communicated with their field agent in California from whence the shipments were made so that a thorough field investigation could be carried out and, if possible, prevent further loss of tomato shipments. This activity was of utmost importance because it undoubtedly prevented the complete loss of large shipments from that section of the country.

In several instances, information was received from the Police authorities that deaths had been caused by the consumption of a liquor said to contain "wood alcohol." In each instance qualified inspectors were immediately assigned to act in co-operation with the Police so that, wherever possible, samples of suspected liquors were obtained and immediately submitted to the Chemical Laboratory of this Department for analysis.

In several instances, also, the Jersey health authorities have called upon us for assistance in carrying out investigations which relate to a certain extent to food dealers operating in that city. At their request, inspectors were detailed to work in conjunction with their inspectors. Through this activity, in one instance, a discovery was made of a milk dealer deliberately adding water to milk which, undoubtedly, would have been brought into this City. These facts were given to the Jersey authorities so that they could take proper action.

From time to time, investigations have been made of drug stores, which resulted in the finding of several violations of the State Pharmacy Law, which is enforced by the New York State Board of Pharmacy. In each instance a full and complete report was forwarded to that Board so that they would be conversant with the facts and take whatever action they deemed advisable.

### *Other Items of Interest.*

The Borough Chief, Borough of Manhattan, reports as follows: During the latter part of the year and due to the enforcement of law which prohibits the sale of intoxicating liquors, many deaths were reported as the result of consuming liquors which contained, in a large part, wood or methyl alcohol. It was our idea to prevent, as far as possible, the sale of such liquors, and a detail of specially trained inspectors was arranged so that each section of the borough was covered and field tests were made at saloons or other points where intoxicating liquors were found. Thousands of samples were examined, and we were unsuccessful in locating any liquor containing wood alcohol at these distributing points. It appeared, therefore, that much of this prohibited compound was sold by peddlers or other irresponsible persons, and that the majority of the saloon keepers were selling liquors which did not contain wood alcohol.



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## *Chemical Laboratory.*

The analytical work is grouped in natural divisions, namely:

1. Milk and Cream.
2. General Food Analyses.
3. Drug Analyses.
4. Water Analyses.
5. Miscellaneous Analyses.

Microscopic determination was used whenever applicable.

The total number of milk and cream samples examined (including—for milk—the determination of total solids, fats, solids not fat, water, and preservatives; for cream—the determination of fat content and preservatives) is as follows:

TABLE I.

	Total Samples.	Found Adulterated.
Milks.....	7882	1499
Creams.....	3705	1162

Preservatives were not found in any sample of milk or cream.

Milk analyses during the year show an average adulteration of 19 per cent. The greatest number of adulterations occurred during the first months of the year. Table II, gives the monthly adulteration:

TABLE II.

	Per cent. found adulterated
January .....	18%
February .....	27%
March .....	10%
April .....	14%
May .....	7%
June .....	12%
July .....	13%
August .....	17%
September .....	11%
October .....	9%
November .....	8%
December .....	8%

The average for cream adulteration was 31 per cent. These occurred also, in greater number, during the first months of the year. Table III gives the monthly adulteration:



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TABLE III.

	Per cent. found adulterated
January .....	28%
February .....	36%
March .....	9%
April .....	7%
May .....	18%
June .....	10%
July .....	16%
August .....	10%
September .....	6%
October .....	8%
November .....	9%
December .....	5%

Comparison during the years 1918 and 1919 are as follows:

TABLE IV.

	Percentage of Adulteration.	
	1918.	1919.
Milks.....	20%	19%
Creams.....	51%	31%

*General Food Analyses* include the following substances given in Table V, with the total number examined and those found adulterated.

The most important of these substances is the alcoholic group. Methyl alcohol, as an adulterant of alcoholic liquors, has been found for years in a small percentage of cases and has occurred only sporadically.

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TABLE V.  
ANALYTICAL WORK OF CHEMICAL LABORATORY DURING 1919.

	Samples Examined	Found Adulterated.
Alcoholic beverages.....	215	7 Contained wood alcohol.
Bread, flour and tapioca.....	25	1 Flour—contained moulds.
		1 Flour—was potato starch.
		1 Tapioca—dirty.
Candy, ice cream, etc.....	121	15 Candy—contained sulphur dioxide.
Coloring matter.....	15	
Condensed milk.....	30	15 Unfit for food.
Condiments, catsup, pickles, etc....	9	2 Mustard—contained salicylic acid.
Disinfectants and preservatives.....	2	
Dairy products—eggs, butter, cheese, lard, etc.....	14	
Fish, canned, etc.....	27	1 Prawn.
Fruits, canned, dried, etc.....	6	1 Figs.
		1 Raisins.
Flavoring extracts.....	35	
Meats, canned, pres., etc.....	17	4 Chopped meat—contained sulphur dioxide.
		1 Corned beef.
Non-alcoholic beverages.....	72	12 Contained alcohol.
		2 Soda—contained starch.
Oils, olive.....	242	52 Contained cottonseed oil.
Preserves.....	6	
Soups.....	2	
Spices.....	4	
Sugars and syrups.....	25	
Teas, coffees, cocoas.....	34	23 Cocoa—contained dirt.
		1 Coffee—contained chicory.
Vegetables, canned, etc.....	17	

Foods containing moulds and bacteria, or decomposed foods of animal or vegetable origin, may be dangerous to health and are, therefore, forbidden by the Sanitary Code.

The Laboratory, during the year, has supported the examination of the food inspectors where embargoes were placed upon suspected foods. Samples of flour, condensed milk, prawn, figs, raisins and corned beef were condemned for the foregoing reason.

One hundred and twenty-one samples of confectionery were found to comply with the requirements of the Sanitary Code, with the exception of 15 samples of candy containing sulphur dioxide, not stated upon the label.

Owing to foreign export restrictions upon olive oil during the war, the supply of olive oil in the United States has been greatly decreased and the temptation to substitute other edible oils for olive oil, wholly or in part, has been great. This is shown by the fact that of 242 samples represented to be olive oil, 21 per cent. contained, or were substituted by, cottonseed oil.

Though sugar has been scarce and expensive, examination of samples taken on complaint and in the regular course of inspection were found to be unadulterated.

Canned vegetables brought to the Laboratory through complaint and routine regular inspection were found to be unadulterated. Chemical preservatives not stated on the label appear to be becoming a custom of the past, judging from the analytical records of the Laboratory.

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Salicylic acid was found in two samples of mustard and sulphur dioxide in four samples of chopped meat. Sulphur dioxide found in the candy samples was not introduced by the candy manufacturer, but is a by-product in the manufacture of glucose that had not been entirely removed.

*Drug Analyses*—The examination of drugs and medicines includes, not only finished products, but also crude drugs.

Chemical examination and microscopical examination was applied, in some cases supplementing each other, in other cases, alone.

Table VI gives the list of such substances analyzed and the large number of adulterated samples, 91, of a total of 676, or 13.3 per cent., indicating the scope of the work necessary, as these samples came from all sources of sale in various parts of the City. These samples, for the most part, represent retail dealers.

TABLE VI.  
*Drug Analyses During 1919.*

	Total Exam- ined	Found Adulter- ated
Drugs and Medicines.....	676	<ul style="list-style-type: none"> <li>1 Denatured Alcohol</li> <li>4 Aspirin Tablets.</li> <li>1 Bay Rum.</li> <li>5 Citrate Magnesia.</li> <li>1 Syr. White Pine Comp.</li> <li>1 Tr. Gentian.</li> <li>1 Headache Powder.</li> <li>1 Tr. Larkspur.</li> <li>17 Lime Waters.</li> <li>3 Ammonium Liniment.</li> <li>1 Soap Liniment.</li> <li>1 Sweet Spirits of Nitre.</li> <li>7 Zinc Ointment.</li> <li>7 Prescriptions.</li> <li>2 Rhubarb and Soda.</li> <li>4 Seidlitz Powder.</li> <li>1 Spirits of Camphor.</li> <li>1 Guaiacol Carb. Tablets.</li> <li>1 Tr. Iodine.</li> <li>1 Sp. Vini Rect.</li> <li>21 Breast Tea.</li> <li>2 Chamomile Flowers.</li> <li>2 Asafoetida.</li> <li>1 Buchu Leaves.</li> <li>1 Belladonnae Leaves.</li> <li>1 Crocus.</li> <li>2 Dried Raspberries.</li> <li>1 Valerian.</li> </ul>

# BUREAU OF FOOD AND DRUGS

The adulterations fall into the following groups:

1. Mislabeling—example—Denatured Alcohol.
2. Substitution—example—Breast Tea—Chamomile Flowers—Cottonseed oil for sesame oil in ammonium liniment; vaseline in place of ben-zoinated lard in zinc ointment.
3. Short weight—example—Seidlitz powders; ethyl nitrate in sweet spirits of nitre, and prescriptions.
4. Insufficient amount of drug in solution—example—Lime water; magnesium carbonate in citrate of magnesia; glycerin in rhubarb and soda.
5. Excess of stems in crude drugs—example—Buchu leaves; *Belladonnae* leaves.
6. *Excess of Ash in Crude Drugs*—example—*Belladonnae*; *Aloes*; *Myrrhæ*; *Capsicum*; *Asafoetida*; *Senna*; *Cubeb*.

Wood alcohol was absent in all samples calling for alcohol.

Table VII, gives the list of crude drugs with adulterations:

TABLE VII.

	Samples Examined.	Found Adulterated.
Breast tea.....	59	21
Anise.....	10	..
Jalap.....	12	..
Belladonna.....	8	1
Chamomile.....	16	2
Senna.....	19	..
Tragacanth.....	2	..
Myrrh.....	4	..
Rhubarb.....	17	..
Lycopodium.....	3	..
Althea.....	5	..
Digitalis.....	12	..
Arnica.....	2	..
Aloes.....	11	..
Asafoetida.....	10	2
Licorice.....	1	..
Saffron.....	5	..
Cantharides.....	3	..
Raspberries.....	26	2
Ergot.....	1	..
Acacia.....	1	..
Capsicum.....	4	..
Buchu.....	2	1
Cigarettes.....	2	..
Nux Vomica.....	2	..
Cubeb.....	3	..
Valerian.....	5	1
Senega.....	1	..
Fennel.....	2	..
Hydrastis.....	2	..
Sassafras.....	1	..
Juniper.....	1	..
Colchicum.....	1	..
Hiera Picra.....	2	..
Sarsaparilla.....	1	..
Comp. licorice powder.....	4	..
Stramonium.....	1	..
Tilia.....	1	..
Gentian.....	1	..
Guaiac.....	2	..
Total.....	269	30

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Of the total number of samples received by the Chemical Laboratory during the year and excluding milk laboratory samples, approximately 21.9 per cent. were examined microscopically.

The Laboratory is very fortunate in having micro-analytical facilities of an especially high order with the privileges and advantages offered by the College of Pharmacy of Columbia University. An excerpt from a statement of the Micro-analyst regarding his work for the past year is given as bearing very definitely upon this work.

*"Drugs*—Systematic inspection of wholesale establishments dealing in crude drugs is made, reserving a day each week or two for the purpose; and providing for reinspection at suitable intervals. The chemist should, if possible, accompany the inspector on these visits. This plan permits greater and more varied inspection without overloading the laboratory with samples which are of good quality. It brings the laboratory service to the source of the material undergoing inspection. A definite list of items liable to adulteration or sophistication should be established for use of the inspectors when they are working alone. Items for which the official specifications are not definite, or which are not official, should be omitted from such a list or provision be made in the Sanitary Code to cover these instances.

*"Foods*—This Laboratory is probably the only Municipal Laboratory in the country which has the facilities for extensive and intelligent work in the microscopy of foods. In many instances, chemical analysis fails to give the information most desired in regard to a foodstuff. In almost every prosecution where the micro-analyst has testified, the Department has secured a penalty. There is a great opportunity for systematic work on manufactured foodstuffs and the issuance of bulletins regarding the results of inspection and analysis."

The recommendation that the analyst be present to take samples of crude drugs personally from wholesale houses, is especially important and has been carried on to some extent.

The importance of microscopy applied to foods is shown by the following list of foods examined in this way partially, or entirely:

1 Tea.	6 Candy.
7 Coffee.	2 Water.
2 Egg Powder.	2 Frankfurters.
25 Cocoa.	1 Coriander.
1 Nutmegs.	1 Prawn.
8 Mustard.	1 Tapioca.
5 Cinnamon.	4 Pie Filling.
1 Pepper.	2 Horse Radish.
28 Milk.	1 Prunes.
4 Tomato Products.	2 Ginger.
2 Bread.	8 Flour.
2 Custard Powder.	1 Cloves.
1 Orangeade.	2 Figs.
1 Raisins.	1 Lobster.
4 Cardamon.	



## BUREAU OF FOOD AND DRUGS

*Water Analyses*—Water analyses made consisted, principally, of examinations for sanitary purity.

*Miscellaneous Analyses*—Miscellaneous samples examined were connected with food work in various ways.

### *General Summary.*

In conclusion, despite the many handicaps, due principally to the many vacancies which have existed in the service during the past year, this Bureau not only maintained the high standard of work performed in former years, but, in many instances, excelled the previous standard of work. This was, in a large measure, due to the willingness and untiring efforts of the employees of the Bureau who, willingly and without complaint, gave considerable overtime to their work.

It should also be pointed out that, although the work of this Bureau is comprehensive, it is still felt that we are only scratching the surface: that there is much work to be done in educating the people along the lines of how to eat and what to eat.

There is considerable work before us in establishing food standards, which are very essential to the proper conduct of the work of this Bureau.

The work of the past year has also brought forcibly to our attention that the Health Department is not merely concerned with the quality of the food, but that the economic feature has, also, a direct relation to public health: as, for instance, the result of the work of the past year in connection with milk. With the high prices of milk, there was a decrease in its consumption and this was reflected by the fact that mothers substituted other foods for milk with the result that their children became undernourished.

It is, therefore, very essential that, in planning the food work of this Department in future, the economic feature of the food supply receive serious consideration.

## BUREAU OF HOSPITALS.

The following is the report of the work performed in the Bureau of Hospitals, for the year, 1919. In all, 12,747 cases of illness were treated; of these 4,516 were in Willard Parker Hospital and Reception Hospital; 3,157 were in the Riverside Hospital; 3,336 were in the Kingston Avenue Hospital; 321 were in the Queensboro Hospital; and 1,417 were in the Municipal Sanatorium for Tuberculosis at Otisville—representing a total of 454,738 patients days, as follows: 76,716, Willard Parker Hospital; 117,803, Riverside Hospital; 73,722, Kingston Avenue Hospital; 5,313, Queensboro Hospital; and 181,184, Municipal Sanatorium.

### *Medical Progress During the Year.*

*Venereal Disease Service*—The Venereal Disease Service for women at Riverside Hospital increased to such a nextent that it was necessary to add three additional twenty-bed wards, in addition to the special building erected for the care of such cases. A standard treatment was adopted for syphilis consisting of six salvarsan and twelve mercurial salicylate injections after which the patient can be discharged provided there are no open lesions of the disease. Through the courtesy of the Public Health Service, there was presented to the hospital, three irrigating tables. The principal feature of these tables is represented by a holding device for hot water, or chemical irrigation solution, whereby it is possible to begin irrigation with a solution of as high a temperature as the patient can bear in the initial injection and change, without discontinuing irrigation, to a temperature several degrees higher. The patient, herself, can manipulate the device and one nurse can direct treatment for several patients at one time. This method of treatment lessens the length of the infection and permits the discharge of cases much earlier than was the case before it was installed.

In August, the rapidly increasing drug addict service at Riverside Hospital made it necessary to transfer the venereal disease service to the Kingston Avenue Hospital for infectious diseases, Brooklyn, where the new diphtheria building was utilized for the care of the patients.

Through the cooperation of various social service organizations and the Girls Manual Training School, a class for vocational training of the women patients in the venereal disease service was installed and a manual training teacher taught the patients.

*Drug Addiction*—In August, the Department began to send large numbers of drug addicts from the Narcotic Clinic to Riverside Hospital for treatment. In order to get the best service, all other classes of cases were transferred from the Island to various hospitals in this and other Departments. A reorganization of the staff was made and a practically new staff of nurses employed. At the time this service was begun, it was impossible

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to obtain nurses under the schedules established by the Board of Estimate and Apportionment. As the source of nurse supply was almost entirely from the Red Cross service, the nurses returning from France being the ones available it was necessary to pay salaries which represented the minimum that the nurses and Red Cross believed to be proper for the duties of the detailed work at Riverside.

The Assistant to the Director, detailed to the direction of the drug addict service, after many conferences, established a routine method of treatment which demanded a medical and nursing personnel about similar to those used in the care of any other acute infection. The treatment consists of the rather rapid withdrawal of the drug, to which the patient is addicted, down to the minimum amount that the patients can get along with, without showing acute symptoms of deprivation. When this point has been reached, the patient is admitted to the so-called hyoscin-ward where hyoscin, in a sufficient quantity to bring about anaesthesia, is administered according to the needs of the individual patients for a period not exceeding thirty-six hours. No two patients receive the same amount of hyoscin. The doses administered are much below those usually prescribed in the routine use of this remedy. After the period of anaesthesia, the patients are transferred to convalescent wards where they remain for a period of four weeks, and are then discharged. This treatment has been described in one of the bulleting of this Department.

The large number of cases treated is convincing evidence of the fact that drug addicts may have their drug of addiction withdrawn scientifically, humanely, and without much suffering, in a short period of time. but this fact does not solve the problem of drug addiction, and unless proper laws are enacted that will prevent the easy distribution of narcotic drugs to addicts, the results of the treatment will not materially influence the problem confronting this community.

*Tuberculosis*—The tuberculosis service for women, temporarily suspended during the War, was reopened at the Kingston Avenue Hospital.

The closing of the Riverside Hospital to tuberculosis made it necessary to send patients from there to Sea View and Metropolitan. This service will be reestablished on April 1st, 1920.

*Leprosy*—The Riverside Hospital and the Willard Parker Hospital have been treating two cases of leprosy for the United States Navy. Chaulmoogra oil, in various preparations, has been the chief agent used. One case has practically recovered; the other case has improved but has had many relapses.

*Influenza in Sanatorium at Otisville*—In my report of 1918, attention was called to what seemed to be an immunity to influenza in the patients at the Sanatorium. This deduction was an error, for, in January, an epidemic of fifty cases occurred, of whom five died. A corps of experienced

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orderlies and nurses were sent to the Sanatorium and, by adopting the methods used for controlling infections in the Contagious Hospitals, the epidemic was checked and the mortality rate kept very low.

### *Medical Education.*

Opportunities for instruction of pupil nurses has been extended to the New York Hospital, which now sends the members of the graduating class for a term of three months. This requires a course of lectures and practical ward instruction by specially assigned nurses. In return, the hospital obtains the services of the nurses.

A post graduate course in Public Health nursing has been given to graduates of the Schools of the Hospitals of the Department of Charities.

Students from Columbia and Teachers Colleges have visited the Hospitals, and been given instruction by the hospital staff. The highly specialized type of service in these hospitals make them particularly valuable for teaching purposes, both in administrative and medical matters.

During the entire school year, clinics have been held for the students of the following teaching institutions: Cornell University, Columbia University, Fordham University, Long Island College Hospital, New York University, Women's College, Special Classes from the Public Health Service. In addition, special clinics have been given to practicing physicians of New York, inspectors of the State Board of Health, groups of medical inspectors, and nurses of this Department, and other groups from the United States Army and Navy.

### *New Ward Buildings.*

At the Kingston Avenue Hospital, Brooklyn, Pavilion No. 3, a one hundred bed building designed for the care of diphtheria was equipped with proper lighting fixtures and opened for the purpose for which it was built. This building was peculiarly adapted to the care of diphtheria; in fact, the wards were particularly arranged with a cubical construction which has been found, at the Willard Parker Hospital, to be best adapted for this disease.

At the Municipal Sanatorium, Shack No. 112, a forty-bed building for tuberculosis, has been completed and occupied. During the epidemic of influenza which infected the Sanatorium early in January, this building was used for a hospital, and it proved to be the most valuable hospital building that is located on the Sanatorium grounds. There are no buildings for patients now under construction.

The maids' dormitory at Riverside Hospital, which has been under construction for several years was completed and occupied on January 24th, 1919. This is a particularly good dormitory building. Not more than two maids are permitted to occupy one room at a time and the building is, to all intentional purposes, as good as any modern nurses home, and



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should attract a higher class of domestic help. Furthermore, the departure from a dormitory type of building to that of individual rooms, materially lessen the danger of the spread of infection amongst the maids in the event of one case coming down with some contagious disease.

At the Kingston Avenue Hospital, the kitchen building which has been under construction for nine years has just been completed. This building, which is modern and up-to-date in every respect, has been a sort of a "battledore and shuttlecock" proposition between various efficiency experts of various kinds from the beginning of its construction up to the day it was finally completed.

At Otisville, the Staff House, construction on which was commenced in 1917, has been lying in a half completed state, deteriorating from exposure to the elements. In 1917, the schedules of laborers prepared and adopted by the efficiency experts being lower than that paid in the immediate vicinity of where building was going on, precluded the possibility of labor being employed to prosecute the work. In 1918, the procedure of procrastination on the part of the Board of Estimate and Apportionment in regard to this building, prevented further building from going on, and in 1919, the work could not be prosecuted because the Board of Estimate and Apportionment, on December 31st, 1918, rescinded the funds which had been provided for the building, thereby effectually stopping further work.

At the Willard Parker Hospital, a carpenter shop and storage shed has been erected under the shadow of the gas tanks on the west border of the hospital grounds. When this building is completed, it will be possible to tear down the old carriage, paint shop and storage sheds for lumber that now represent a fire menace to the staff house and maids' dormitory and which will leave these buildings accessible from the street without passing through these old "eye-sores" that have existed here so long.

### *Improvements in the Service.*

An Admission Office for the Municipal Sanatorium at Otisville has been opened at 128 Prince Street, in connection with the Diagnostic Clinic. The opening of this office has been of great value to the Sanatorium. The admitting physician is familiar with the needs and wants of the Sanatorium; he knows how many substandard cases are present and in this way is able to choose patients that are desirable for the vacancies that exist. Prior to this innovation, the first intimation that the Sanatorium had of the character of patients it was to receive was when the patients arrived at the Reception Hospital, and in many instances, although they were supposed to be favorable, second stage cases or incipient cases, they frequently had to be sent directly to the infirmary. Knowing the present conditions, there is less of that kind of trouble.

Obsolete equipment and articles no longer required by this Bureau



## ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

have been offered to the Sinking Fund for the benefit of other City Departments that might have need for them. The old, portable smallpox shack at Riverside Hospital, which has been serving as a church for all denominations for many years, was razed to the ground during the summer and the churches transferred to two former wooden ward buildings in good condition. There is now a Roman Catholic and a Protestant Church that would be a credit to any village, representing the same number of church goers as are found at Riverside Hospital.

With the beginning of the drug addict service at Riverside Hospital, it became evident that some sort of a commissary or community store would be necessary to supply the wants of the patients which were not strictly hospital charges. Such a store has been established and has proven a great convenience to the patients, and has relieved the hospital authorities from many onerous duties connected with supplying patients those articles not a part of its routine stores. The operation of this store is in the hands of a committee, and, from the profits, it employs clerks. Any surplus money accumulated as a result of profit is used for purchasing entertainment, equipment for recreation, books, etc., for the patients. A certified accountant has been employed to audit its accounts.

### *Cooperation with Other City Departments.*

The Bureau of Hospitals has had, during the year, to cooperate with many other City Departments, the Federal Government, the various State Departments and with organizations of National, State and Municipal importance. The Corrections Department, being without proper boats at Riker's Island, the Health Department, at a great inconvenience to its service, has furnished, for a good part of the year, a ferry to and from Riker's Island. This Bureau does not begrudge the Department of Corrections the service it has given; but it wants it to be known that this was afforded at great inconvenience to the Department of Health, and some suffering on the part of its patients.

This Bureau has received, through the Bureau of Foods and Drugs, an appreciable amount of food stuffs that had been condemned as unfit for use as a whole, but in which there were many good amounts that could be salvaged and used. Among these was one consignment of hams and bacon that had been condemned under Army regulations, and out of which a sufficient amount was salvaged to make material saving in the cost of our food consumption. Another large delivery came from a warehouse where a fire from twenty tons of sulphur had so rusted the cans as to make them unfit for commercial purposes. The food was perfectly good, and represented a great saving to this Bureau. A delivery of these goods was sent to Bellevue Hospital and Riker's Island. Deliveries of lemons also were received.

In order that certain boats of the City could be released for the use of

## BUREAU OF HOSPITALS

the Mayor's Committee on Welcoming Soldiers, the boats of this Department undertook to carry on the service of those being used by the Committee. This represented a great deal of overtime and onerous work by the employees of the boat service and they deserve commendation for their patriotic response to duty.

During the summer, the Bureau of Industrial Hygiene requested the sterilization of certain articles which were supposed to be unfit for commercial use. These were principally shaving brushes. Steam sterilization was performed, and the brushes renovated in our paint shop. This represented a great deal of work, but gave the Department a feeling of security in regard to the non-infectiousness of these brushes.

The New York Trade School loaned to Riverside Hospital, for the benefit of the women in the Venereal Disease Service, sewing machines for the purpose of teaching them a trade. This was an effort, on the part of the Trade School, together with other civic organizations, to give these women a working knowledge of plain sewing so that when they left the hospital, they would be able to obtain a job, and not go back to their former environments. The Trade School also furnished a teacher, and all the people who contributed to this good work are to be commended for their thoughtful efforts.

Miss Heller, representing the American Red Cross, has regularly visited the hospitals throughout the year, giving a very good social service to the soldiers and sailors and recently to the chronic tube cases. Through her intervention, the lepers were given a number of automobile rides, and the chronic tube patients have been given several parties. The latter were also guests of the Barnum and Bailey Circus at its performance at Bellevue Hospital. The Knights of Columbus and the Society of St. Vincent de Paul have given a number of entertainments at Riverside Hospital during the year.

## ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

WILLARD PARKER HOSPITAL  
GENERAL STATEMENT FOR YEAR.

	Patients.				Diseases.			Patients.			
	Re- main- ing Dec. 31, 1918.	Admitted.		Total Patients Treated.	Trans- ferred from other Con- tagious Diseases.	Total Diseases Treated.	Trans- ferred to other Con- tagious Diseases.	Dis- charged.	Transferred to		Re- main- ing Dec. 31, 1919.
		New.	Transferred From Hospital.						Hospital.	Num- ber.	
Influenza.....	43	377	.....	420	17	437	4	371	.....	..	..
Diphtheria.....	117	2,164	.....	2,281	15	2,296	94	1,698	.....	..	99
Scarlet fever.....	23	514	.....	537	38	575	57	446	.....	..	43
Measles.....	16	494	.....	510	33	543	13	412	.....	..	58
Small-pox.....	..	3	.....	3	..	3	..	...	Kingston Avenue	3	..
Varicella.....	8	156	.....	164	9	173	7	150	.....	..	11
Pertussis.....	4	70	.....	74	3	77	5	51	.....	..	13
German measles.....	2	27	.....	29	1	30	3	27	.....	..	..
Mumps.....	23	170	.....	193	6	199	7	156	Riverside	1	35
Tuberculous Meningitis.....	..	4	.....	4	6	10	..	...	.....	..	10
Cerebro-spinal meningitis.....	..	29	.....	31	2	33	4	18	.....	..	1
Diphtheria and scarlet fever.....	14	14	.....	14	46	60	4	34	.....	..	2
Diphtheria and measles.....	2	23	.....	25	17	42	6	18	.....	..	..
Diphtheria and varicella.....	1	5	.....	6	4	10	1	9	.....	..	..
Diphtheria and pertussis.....	1	3	.....	4	2	6	2	2	.....	..	..
Diphtheria and mumps.....	..	..	.....	...	1	1	..	...	.....	..	1
Scarlet fever and measles.....	..	..	.....	...	23	23	12	6	.....	..	5
Scarlet fever and varicella.....	1	1	.....	2	6	8	1	6	.....	..	1
Scarlet fever and pertussis.....	..	..	.....	...	6	6	2	2	.....	..	1
Measles and pertussis.....	1	3	.....	4	6	10	2	7	.....	..	1
Measles and varicella.....	..	1	.....	1	1	2	1	1	.....	..	..
Typhoid fever.....	..	1	.....	1	..	1	..	...	.....	..	..
Scarlet and Rothlein.....	..	1	.....	1	1	1	1	1	.....	..	..
Cerebro-spinal m. and varicella.....	..	..	.....	...	..	..	..	...	.....	..	..
Measles, diphtheria and per- tussis.....	..	..	.....	...	1	...	..	...	.....	..	..
Influenza and varicella.....	..	..	.....	...	1	...	..	...	.....	..	..
Polomyelitis.....	..	5	.....	5	..	5	..	4	.....	..	..
Erysipelas.....	..	8	.....	8	..	8	1	5	.....	..	..
Leprosy.....	..	2	Riverside	4	..	4	..	4	.....	..	..
Total.....	244	4,075	.....	4,321	244	4,565	227	3,429	.....	4	271
For observation.....	10	169	Riverside	180	7	187	24	132	Riverside	1	14
Accompanying.....	..	15	.....	15	..	...	..	14	.....	..	1

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RIVERSIDE HOSPITAL  
GENERAL STATEMENT FOR YEAR.

	Patients.				Diseases.			Patients.			
	Re- main- ing Dec. 31, 1918.	Admitted.			Total Patients Treated.	Trans- ferred from other Con- tagious Diseases.	Trans- ferred to other Con- tagious Diseases.	Died.	Transferred to		Re- main- ing Dec. 31, 1919.
		New.	Transferred From						Num- ber		
			Hospital.								
Diphtheria.....	17	...	Otis.	12	29	..	..	2	Otis.	27	..
Scarlet fever.....	..	...	...	..	..	..	..	..	...	..	..
Leprosy.....	2	..	..	..	2	..	..	..	W. P.	2	..
Small-pox.....	..	..	..	..	..	..	..	..	..	..	..
Varicella.....	..	..	..	..	..	..	..	..	..	..	..
Pertussis.....	..	..	..	..	..	..	..	..	..	..	..
German measles.....	..	..	..	..	..	..	..	..	..	..	..
Mumps.....	..	1	...	..	1	..	..	1	..	..	..
Tuberculosis.....	133	295	Otis.	3	625	..	..	224	..	316	..
Veneral.....	186	537	Naval	194	723	..	..	627	K. A.	96	..
Diphtheria and scarlet fever..	..	..	..	..	..	..	..	..	..	..	..
Diphtheria and measles.....	..	..	..	..	..	..	..	..	..	..	..
Diphtheria and varicella.....	..	..	..	..	..	..	..	..	..	..	..
Diphtheria and pertussis.....	..	..	..	..	..	..	..	..	..	..	..
Diphtheria and German measles	..	..	..	..	..	..	..	..	..	..	..
Scarlet fever and measles.....	..	..	..	..	..	..	..	..	..	..	..
Scarlet fever and varicella.....	..	..	..	..	..	..	..	..	..	..	..
Scarlet fever and pertussis.....	..	..	..	..	..	..	..	..	..	..	..
Measles and pertussis.....	..	..	..	..	..	..	..	..	..	..	..
Measles and varicella.....	..	..	..	..	..	..	..	..	..	..	..
Typhoid.....	..	1	..	..	1	..	..	1	..	..	..
Drug Addicts.....	..	1,515	..	..	1,515	..	..	1,378	..	..	134
T. B.—Drug Addict.....	..	1	..	..	1	..	..	1	..	..	..
Total.....	338	2,350	...	209	2,897	..	..	2,234	..	441	134

ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

KINGSTON AVENUE HOSPITAL.  
GENERAL STATEMENT FOR YEAR.

	Re- main- ing Dec. 31, 1918.	Patients.			Diseases.				Patients.				
		Admitted.			Total Patients Treated.	Trans- ferred from other Con- tagious Diseases.	Trans- ferred to other Con- tagious Diseases.	Dis- charged	Died.	Transferred to		Re- main- ing Dec. 31, 1919.	
		New.	Transferred From							Hospital.	Num- ber.		
			Hospital.	Num- ber.									
Diphtheria.....	52	1,039	.....	..	1,091	8	1,099	21	784	212	Riverside	9	73
Scarlet fever.....	31	285	.....	..	316	19	335	27	231	17	.....	..	60
Measles.....	7	150	.....	..	157	17	174	19	106	29	.....	..	20
Small-pox.....	..	17	.....	..	17	1	18	..	17	..	.....	..	1
Varicella.....	..	69	.....	..	69	9	78	9	53	4	.....	..	12
Pertussis.....	7	85	.....	..	92	3	95	1	58	11	.....	..	25
German measles.....	..	22	.....	..	22	8	30	4	26	..	.....	..	..
Mumps.....	3	264	.....	..	267	5	272	2	267	1	.....	..	..
Tuberculosis.....	..	15	Riverside	18	33	..	33	..	16	11	.....	..	6
Cerebro-spinal meningitis.....	1	29	.....	..	30	..	30	2	18	9	.....	..	2
Diphtheria and scarlet fever.....	..	5	.....	..	5	14	19	2	14	2	.....	..	1
Diphtheria and measles.....	..	6	.....	..	6	3	9	1	7	1	.....	..	..
Diphtheria and varicella.....	..	3	.....	..	3	5	8	2	2	1	.....	..	3
Diphtheria and pertussis.....	..	1	.....	..	1	2	3	1	2	..	.....	..	..
Diphtheria and German measles.....	..	2	.....	..	2	..	2	2	..	..	.....	..	..
Scarlet fever and measles.....	..	..	.....	..	..	1	1	1	..	..	.....	..	..
Scarlet fever and varicella.....	..	..	.....	..	..	9	9	2	7	..	.....	..	..
Scarlet fever and pertussis.....	..	..	.....	..	..	..	..	..	..	..	.....	..	..
Measles and pertussis.....	..	1	.....	..	..	..	1	..	..	..	.....	..	1
Measles and varicella.....	..	..	.....	..	..	3	3	3	..	..	.....	..	..
Typhoid fever.....	..	..	.....	..	..	1	1	..	1	..	.....	..	..



BUREAU OF HOSPITALS

Diphtheria and poliomyelitis..	..	...	...	...	...	1	..	1	...	..	...	..	..
Scarlet and Parotitis.....	19	686	...	...	...	6	716	6	2	4	...	...	..
Influenza.....	..	1	686	...	...	11	1	10	1	651	55	...	..
Influenza and scarlet.....	..	1	1	...	...	..	1	1	1	...	...	...	..
Influenza and diphtheria.....	..	1	1	...	...	..	1	1	1	1	...	...	..
Influenza and erysipelas.....	..	2	3	...	...	..	3	..	..	2	1	...	1
Anthrax.....	1	1	1	...	...	..	1	..	..	...	1	...	..
Rabies.....	..	1	1	...	...	..	1	..	..	...	1	...	..
Tuberculous meningitis.....	..	1	1	...	...	..	1	1	..	...	1	...	..
Diphtheria and scarlet fever and parotitis.....	..	...	...	...	...	1	1	1	1	...	..	...	..
Diphtheria and measles.....	..	...	...	...	...	..	...	..	..	...	..	...	..
Diphtheria and varicella.....	..	...	...	...	...	..	...	..	..	...	..	...	..
Diphtheria and pertussis.....	..	1	1	...	...	..	1	1	1	...	..	...	..
Diphtheria and erysipelas.....	..	2	2	...	...	..	2	..	..	2	..	...	..
Scabies.....	..	...	3	...	...	..	3	..	..	...	1	...	2
Scarlet fever and varicella.....	..	3	10	...	...	..	10	..	..	10	..	...	..
Scabies and pertussis.....	..	10	...	...	...	..	...	..	..	...	..	...	..
Drug addicts.....	..	...	...	...	...	..	2	..	..	2	..	...	..
Measles and varicella.....	..	1	1	...	...	..	4	1	1	1	1	...	..
Peritonsillar abscess.....	..	4	4	...	...	..	1	1	1	1	3	...	2
Poliomyelitis.....	..	1	1	...	...	..	35	1	1	29	1	...	85
Meningococcus carrier.....	..	32	34	...	...	..	305	..	..	212	1	Riverside	7
Erysipelas.....	2	213	91	Riverside	109	130	3,315	115	2,527	361	16	Riverside	206
Veneral.....	..	2,953	109	Riverside	109	130	3,315	115	2,527	361	16	Riverside	206
Total.....	123	2,953	109	Riverside	109	130	3,315	115	2,527	361	16	Riverside	206
For observation.....	5	137	..	...	..	8	150	33	89	22	..	...	6
Accompanying.....	..	9	..	...	..	11	20	1	15	2	..	...	2

## ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

QUEENSBORO HOSPITAL.  
GENERAL STATEMENT FOR YEAR.

	Re- main- ing Dec. 31, 1918.	Patients.			Diseases.			Patients.		
		Admitted.		Total Patients Treated.	Trans- ferred from other Con- tagious Diseases.	Total Diseases Treated.	Trans- ferred to other Con- tagious Diseases.	Dis- charged	Died.	Transferred to
		New.	Transferred From Hospital.							Hospital. Num- ber.
Diphtheria.....	4	80	.....	84	..	84	6	53	17	.....
Scarlet fever.....	1	29	.....	30	..	30	..	26	3	.....
Measles.....	..	1	.....	1	..	1	..	1	..	.....
Pertussis and typhoid fever...	..	..	.....	..	1	..	..	1	..	.....
Variella.....	..	5	.....	5	..	5	..	5	..	.....
Pertussis.....	3	5	.....	8	..	8	..	6	..	.....
Influenza and croup.....	..	..	.....	..	2	2	..	1	1	.....
Mumps.....	..	1	.....	1	..	1	..	..	1	.....
Acidosis and br. pneu.....	..	..	.....	..	1	1	..	..	1	.....
Cerebro-spinal meningitis....	..	6	.....	6	..	6	1	4	1	.....
Diphtheria and scarlet fever..	..	1	.....	1	..	1	..	1	..	.....
Narcotic (obs.) addiction.....	..	1	.....	1	..	1	..	1	..	.....
Diphtheria and mumps.....	..	..	.....	..	1	1	..	..	..	.....
Diphtheria and pertussis.....	..	..	.....	..	..	..	..	..	..	.....
Rabies.....	..	1	.....	1	..	1	..	1	..	.....
Tuberculous Meningitis.....	..	3	.....	3	1	4	..	..	4	.....
Meningitis.....	..	1	.....	1	..	1	..	..	1	.....
Scarlet fever and pertussis....	..	..	.....	..	1	1	..	..	..	.....
Measles and pertussis.....	..	..	.....	..	1	1	..	1	..	.....
Bronchitis.....	..	..	.....	..	1	1	..	..	..	.....
Poliomyelitis.....	..	3	.....	3	..	3	..	2	1	.....
Erysipelas.....	..	1	.....	1	..	1	..	..	..	.....
Influenza.....	27	97	.....	124	3	127	2	102	23	.....
Typhoid fever.....	..	1	.....	1	..	1	1	..	..	.....
Narcotic addiction.....	..	32	.....	32	..	32	..	26	..	.....
Tetanus.....	..	1	.....	1	..	1	..	1	..	.....
Total.....	35	270	.....	304	11	315	10	232	53	R. H. 6
For observation.....	1	17	.....	18	1	19	3	16	..	.....
No case.....	..	..	.....	..	3	3	..	3	..	.....

# BUREAU OF HOSPITALS

## MUNICIPAL SANATORIUM. GENERAL STATEMENT FOR YEAR.

	Patients.					
	Remaining Dec. 31, 1918.	New.	Total Patients Treated.	Discharged	Died.	Remaining Dec. 31, 1919.
Tuberculosis.....	415	1,002	1,417	853	27	537
Total.....	415	1,002	1,417	853	27	537

BUREAU OF PUBLIC HEALTH EDUCATION  
AND  
DIVISION OF INDUSTRIAL HYGIENE.

The Bureau of Public Health Education operated to extend and to co-ordinate the educational work being carried on by the Department of Health. During this year, the Bureau conducted the following activities:

*Publications.*

*Regular*—Weekly Bulletin, Monthly Bulletin, Food and Drug Bulletin, School Health News, Staff News.

*Irregular*—Reprints and Monographs.

*Occasional*—Health Leaflets, Posters, Placards, etc.

The policy adopted regarding the publications was to make each of the periodicals pursue a line of educational publicity that was connected with the work for which the publication was issued.

For instance, in School Health News, the general subject of personal hygiene was discussed extensively in each issue, with sufficient new notes to make the publication readable.

The Weekly Bulletin was operated on the same line, except as it amplified the policy of the Department relative to special undertakings. In this way, it endeavored to secure more general cooperation between the public and the Department, it being felt that unless the public—and particularly the medical profession—understood thoroughly the meaning of, and the reason for, a law or regulation, as well as the existence of it, there was a distinct tendency to disregard the same. It was, therefore, necessary to keep the public fully informed regarding the latest developments in public health. The amendments to the Sanitary Code, as well as special rules and regulations, were published, as early as adopted, in order to give the same better publicity.

The Monthly Bulletin continued to be the organ for the issuing of scientific articles relating to public health work, and was a valuable means of conveying official information, not only to our own citizens, but to health authorities throughout the country.

A complete revision of the mailing list of all the issues was made, bringing the same up-to-date and removing obsolete names, thereby saving postage and wastage.

*Motion Pictures.*

Open air shows are occasionally given. Films are rented and exhibited in regular theatres. Films are furnished free to schools and educational

## BUREAU OF PUBLIC HEALTH EDUCATION

associations, and special feature scenarios are occasionally prepared, as well as news feature films.

### *Information Bureau.*

Persons and organizations desiring information are aided in every possible way, and out of town and foreign inquiries are handled in large numbers.

### *Lunch Room.*

The Bureau operates a lunch room for Department employees, which also serves as an exhibit, in instructing how clean eating places should be operated.

### *Miscellaneous.*

The Bureau, in addition to its files of health literature, contains a very considerable collection of photographs and other data, which is loaned free to responsible persons.

The following is a statistical tabulation of the work performed by this Bureau, together with the corresponding figures for 1918:

Activity.	1919.	1918.
Lectures.....	627	51
Motion picture films.....	14	27
Special literature issued.....	4,001	10
Requests for health literature.....	6,787	1,910
Requests for lantern slides, photos and exhibits.....	2,291	190
Special exhibits.....	6,248	....
Reprints and monographs.....	1	63
Special write-ups.....	19	6
Special literature distributed.....	127,569	....
Press notice.....	1	20
Callers.....	397	....
Conferences.....	232	....

### *Venereal Diseases.*

During the past year, this Bureau was placed in charge of the expenditure of the funds provided by the Government (Kahn-Chamberlain Act), which specifically required educational work for the prevention and control of social diseases, more particularly gonorrhoea and syphilis.

### *Division of Lectures.*

A new division was organized during the year, named the Division of Lectures, of which the Supervisor of the Division of Industrial Hygiene was placed in charge, with an Advisory Board on Social Diseases, through the funds above mentioned.



## ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

Private lecturers were paid, who gave lectures on request. Arrangements were made with private and public organizations, to which lectures were given.

The statistical table, below, shows the approximate number of lectures and the audiences which attended these lectures, stress being particularly laid upon the prevention of disease:

LECTURES GIVEN DURING 1919.

Month 1919.	Number Lectures.	Audience.		
		Female.	Male.	Total.
June.....	48	1,280	5,120	6,400
July.....	17	680	1,090	1,770
August.....	11	900	.....	900
September.....	36	580	1,130	1,710
October.....	45	2,125	1,306	3,431
November.....	64	3,765	2,254	6,019
December.....	82	3,760	3,265	7,025
Miscellaneous.....	27	1,225	1,050	2,275
Totals.....	330	14,315	15,215	29,530

Lectures in Italian were given to all, in the Bush Terminal stores, about 3,400. In Manhattan, to large factories, about 10,000 foreigners being reached, in their native tongue. Talks in Yiddish were given in "Y's," settlements, night schools, union headquarters, and shops, some 5000 being reached through this language.

The constant aim has been to arouse interest, generally, and secure the support and interest of the community, in a definite concrete way, for the improving of health conditions.

### *Exhibits.*

During the past year, the exhibit work has been conducted much along the same lines as heretofore. The loaning of lantern slides, motion picture film posters, and other exhibit material, is going on constantly, and there is a great demand for health exhibits from a large variety of local interests.

A number of slides, illustrating public health work, have been added to the Loan Library of Slides, and a number of requests therefor have been filled, as well as an enormous amount of use made of these slides by our own lecturers.

## BUREAU OF PUBLIC HEALTH EDUCATION

Experience shows that this Bureau needs more effective and more popular means of disseminating its health information, and that this could be met by a travelling motion picture outfit.

The Bureau also needs a number of new films on child welfare, venereal diseases, infant feeding, fly, mosquito, eye, and tuberculosis work.

In cooperation with other organizations, this Bureau has given publicity to literature received from federal and state organizations. We particularly desire to call attention to the cooperation given by private societies, particularly those especially interested in the education of young people and those concerning themselves with work among criminals, and social disease work.

### *Division of Industrial Hygiene.*

The Division of Industrial Hygiene was transferred from the Bureau of Preventable Diseases to the Office of the Commissioner of Health on January 28, 1919. The staff consisted of two medical inspectors and one clerk. The Commissioner placed the Division under the direction of a Superintendent, sharing offices with the Bureau of Public Health Education.

About February 1, 1919, a temporary staff of industrial-medical and sanitary-inspectors was appointed, there being ten medical-industrial inspectors and twenty-five sanitary-industrial inspectors.

In order that these temporary employees might be trained to undertake this special work, a course of lectures on the nature of the work that they were to perform was given by experts from other Bureaus, within the Department, and from persons specially qualified in the lines of endeavor, from without the Department. The cooperation of the State Industrial Commission was secured, and members of their staff aided in instructing this new staff. The Bureau of Food and Drugs, and the Sanitary Bureau gave these new inspectors field work in order to acquaint them with Health Department activities; and the Counsel of the Department of Health had them visit the Municipal Court for the purpose of showing them the procedure.

The temporary inspectors continued their duties until the permanent staff was appointed from the Civil Service list of candidates for these positions. The services of the temporary industrial-medical inspectors was discontinued on July 4, 1919; and on July 5, a new staff of industrial-medical inspectors was appointed, only five of the staff of the temporary inspectors being reappointed as permanent inspectors: therefore, the entire staff had to be re-trained. On July 31, 1919, a list of successful candidates was promulgated by the Municipal Civil Service Commission, and in August, 25 permanent industrial-sanitary inspectors were appointed, 8 of whom were women. These new inspectors, both medical and sanitary, were

## ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

given a course of lectures and instructions on industrial hygiene similar to the course given to the temporary staff.

### *Occupational Diseases.*

The following number of occupational diseases were reported during the year:

	Reported by Private Physicians.	Reported by Hospitals and Dispensaries.
Lead poisoning.....	7	10
Mercury poisoning.....	1	1
Aniline poisoning.....	0	1
Anthrax.....	1	13
Totals.....	9	25

### *Illuminating Gas Poisoning.*

Because of the number of deaths due to gas asphyxiation from various causes, which might be avoided, an investigation of all cases of gas asphyxiation was started in November, 1919.

It is intended to bring to the attention of the President of the Board of Aldermen, these accidents, with a view to having a standard gas tube ordinance framed; as second hand gas tubing is being sold, which is very often porous.

The tabulation, following, shows that 7 of the accidents were caused by faulty tubing.

### *Illuminating Gas Poisoning.*

Open jet .....	27
Leak in gas tubing.....	7
Gas stove leaking.....	10
Turned-off gas near stove, real cock open.....	3
Frozen gas, fixed, open gas jet.....	4
Leak in pipe.....	11
Tubing disconnected .....	3
Gas stove jet open.....	12
Gas stove and light cocks too close.....	3
Deficient pressure, gas went out.....	8
Total .....	88

## BUREAU OF PUBLIC HEALTH EDUCATION

### *Lectures.*

During the year, the Division of Lectures worked zealously to secure audiences of workers for lectures on public health and industrial hygiene, getting in touch with unions and other workingmen's associations, to bring this about. The Division met hearty cooperation in this, and 449 lectures were delivered on the following subjects:

Sex Hygiene .....	18
Venereal Diseases .....	129
Drugs and Patent Medicines.....	25
Personal Hygiene .....	94
Social Hygiene .....	10
Accident Prevention .....	62
Dangers of Dust.....	1
Industrial Hygiene .....	5
Protective Clothing .....	1
Sanitation .....	23
Drug Addiction .....	29
Tuberculosis .....	8
Menstruation .....	4
Typhoid .....	13
Cancer .....	9
First-Aid .....	5
Public Health .....	2
Women in Industry.....	11
Total .....	449

In this way, the Division was able to get before the workers knowledge which, heretofore, the Health Department was not in a position to offer. There were over 60,000 workers reached in this way.

### *Physical Examinations.*

During the year, the industrial workers were given physical examinations by the industrial-medical inspectors of this Division. Following is a tabulation showing the industries and the number of workers in these industries, examined during the year:

Photo-Engravers .....	1,312
Auto Trimmers .....	44
Auto Assemblers .....	31
Auto Metal Workers.....	32
Painters .....	109
Woodworkers .....	84

## ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

Blacksmiths .....	78
Button Workers .....	9
Sutures and Ligatures.....	5
Clothing Industry .....	32
Celluloid Workers .....	24
Butcher .....	10
Cigar Makers .....	23
Artificial Flowers .....	10
Miscellaneous .....	62
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Total .....	1,865

There was a notice sent to each of the men examined, informing them as to their physical condition at the time of the examination. Where physical defects were found, the man was advised to go to his family physician for treatment.

A letter of appreciation was sent to the Division by the president of the photo-engravers' union, thanking him for the way the examination of the photo-engravers was performed. In this letter, he said that the men were thoroughly satisfied and that the Health Department had accomplished great work.

A special article on physical examinations was prepared by the Superintendent of the Division and published in the Monthly Bulletin, which was distributed to a number of factories and labor organizations, in order to inform them of the necessity for individual physical examination, and to obtain the cooperation of the public in an endeavor to make a health survey of workers in industry.

### *Distribution of Placards.*

The following number of educational posters were distributed through the efforts of the inspectors. The employers and employees showed great interest in these placards, as they soon learned to realize their value. They began to appreciate the fact that these notices served as a warning to workers who were inclined to be less careful of the health of their co-workers in the cleanliness of the workroom.

9,500 "No Spitting" signs.

9,000 "Do Your Part" signs on cleanliness of toilets.

12,000 "Warning" signs for Garages.

3,000 "Notice" to employees to report insanitary condition.

4,000 "Dangers of Wet Paint" signs.

Following is a list of industries inspected during the year, violations found, and action taken by this Division:



# BUREAU OF PUBLIC HEALTH EDUCATION

## INDUSTRIAL INSPECTIONS DURING 1919.

	Insp.	Reinsp.	N. C. A.	Items Referred to		
				A. P. E.	State Ind. Com.	Fire Dept.
Candy.....	10	3	8	7	..	..
Chemicals.....	85	58	12	200	..	1
Clothing.....	651	507	679	1,442	2	1
Embroideries.....	75	66	36	138	..	..
Furs.....	29	54	2	87	..	..
Garages.....	889	1,242	651	2,016	..	1
Heavy machinery.....	57	69	16	34	3	..
Jewelry.....	41	23	104	176	..	..
Laundry.....	240	115	153	334	..	..
Millinery.....	1,155	629	1,696	1,252	..	..
Paper boxes.....	24	53	38	75	..	..
Print. and Litho.....	335	406	347	932	1	..
Rags.....	27	40	8	37	..	..
Sheet metals.....	27	23	3	23	..	..
Ship building.....	16	19	14	11	..	..
Shoes.....	24	22	11	46	1	..
Silk.....	9	6	4	13	..	..
Stone cutting.....	60	37	45	15	..	..
Storage batteries.....	27	50	40	46	..	..
Textiles.....	204	284	34	319	1	2
Tobacco.....	327	232	156	453	1	..
Woodworking.....	37	23	24	74	1	..
Woolens.....	630	430	497	469	2	..
Miscellaneous.....	748	579	319	1,031	2	1
Totals.....	5,727	4,970	4,897	9,230	14	6

### *Narcotic Drug Clinic.*

During the month of April, 1919, the Commissioner of Health instituted a free narcotic dispensary for the purpose of relieving an emergency condition and studying the narcotic addict, appointing an advisory board of three, consisting of the Chairman, Dr. S. Dana Hubbard, and members: Miss Sara Graham-Mulhall (later 1st Deputy Commissioner, Department of Narcotic Control of New York) and Dr. Marion McMillan, formerly Acting Director of the Bureau of Foods and Drugs.

On April 10, 1919, the dispensary was opened, and the number of addicts rapidly increased, the Clinic being operated at 145 Worth Street, Manhattan, from 2 to 8 p. m., daily. The Division of Industrial Hygiene supplied a staff of five physicians, daily, until the work was turned over to the Director of the Narcotic Clinic, on July 1, 1919. During this period the Narcotic Clinic was visited by 2,723 addicts, of whom there were 2,216 males and 507 females.

Owing to the fact that the registration of addicts became compulsory, on July 1, 1919, a gradually increased number of addicts applied to the narcotic dispensary, and it became necessary to assign three additional medical inspectors, and two sanitary inspectors, to assist in the work, this assignment being continued until October, 1919.

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## BOROUGH OF BROOKLYN

### *Sanitary Division.*

The activities of the Sanitary Division for the year have been largely increased, particularly in the number of heat complaints that commenced early in October. Much of this work was very exacting and required prompt and special care and long hours of court action. Inspectors have had to be far more active in many districts in abating nuisances on account of illness and also due to the war activities.

There has been a general survey made of the theatres and motion picture houses in this Borough, on three different occasions, relative to the use of common towels, common drinking cups, dry sweeping and the providing of proper and adequate ventilation. The subway and elevated railroad stations have been gone over, frequently, each month. During the summer months, the stables throughout the borough were kept under close observation in an endeavor to prevent fly breeding, to abate such nuisances, when found, as rapidly as possible.

The following inspections were made during the year 1919.

Barber shops .....	2,732
Baths and bathing establishments.....	1,052
Cesspools and Privies.....	1,366
Comfort stations .....	826
Common cups and towels.....	1,239
Birds and small animals.....	163
Camps .....	303
Dwellings .....	13,140
Dumps .....	536
Factories .....	137
Horseshoeing establishments .....	333
Laundries .....	825
Lodging houses .....	289
Motion Pictures .....	255
Roof tanks .....	82
Garages .....	91
Smoke .....	1,422
Stables .....	9,901
Water .....	135
Arrests .....	1,135

There have been frequent inspections of bathing beaches during the season, to see that the proprietors comply with the rules and regulations of the Department relative to proper sterilization of bathing suits, towels, etc., and to see that the beaches were kept in clean condition. Little

## BUREAU OF PUBLIC HEALTH EDUCATION

difficulty was found in securing compliance with the regulations in camp, tent, and bungalow colonies.

### *Sanitary Engineer.*

The activities of the Mosquito Extermination Division consists of (a) maintenance of the ditches installed in the Boroughs of Brooklyn, Bronx, Queens, and Richmond; (b) the installation of new ditches in these boroughs; and (c) co-operation with Government officials with reference to adjacent Government reservations.

A budget allowance of \$4,332.25 was granted, and made available March 24, 1919, covering 1,333 days for per diem laborers at \$3.25 per day (foreman excluded). This amount was inadequate and, later, \$10,000. was requested, but only \$9,033 was granted for personal service, transportation and supplies being excluded.

This amount became available when the first fund was exhausted and the force was increased from fourteen to twenty-six laborers, carried to December 31, 1919.

The entire marsh area in the borough was thoroughly cleaned, and the maintenance work was commenced at Old Mill, on April 7th, by a force of fourteen laborers and continued westerly to Coney Island, which was reached September 15th. The force was then moved back to Old Mill and the work proceeded easterly to the City line and Hook Creek, adjacent to the Nassau County line, and completed December 31st.

The late date on which this work was commenced was due to the delay in release of funds and to difficulty in obtaining laborers from the list at the price allowed by the City.

A total of 2,229,790 feet of ditches was cleaned, and 500 feet dug in the Borough during the year.

No work was done in the Dyker Beach Park section, as an adequate outlet was not provided until late in the season. This tract was kept under observation and pressure was brought on the Department of Parks to obtain an adequate outlet, resulting in culvert being cleaned, and extended back on inlet side about 75 feet to prevent sand filling same.

Fill still in progress at 92nd Street and the Parkway.

Ditches cleaned, Salt Marsh, Jamaica Bay section.....	2,229,790 ft.
Ditches dug, Salt Marsh, Jamaica Bay section.....	500 ft.

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Total cleaned and dug.....	2,230,290 ft.
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### *Division of Preventable Diseases.*

*Veneral Clinics*—During the early part of the year, three diagnostic clinics were organized in this Borough: in the Eastern District, Brownsville, and Prospect sections, but the Eastern District and Brownsville sections

## ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

clinics were disbanded as there was not a sufficient demand to warrant continuing the same. At present we have but one diagnostic clinic, and this is at the Prospect Branch Office where we also have our treatment clinic. Out of the original 6 physicians appointed to this work, three have resigned.

*Day Camp "Rutherford"*—We made a very interesting study of 100 children on the Day Camp "Rutherford" to determine the effect upon the condition of their nutrition and general physique by being taken care of on this boat, receiving proper food, through instruction along the lines of health.

*Epidemiological*—A marked decrease in number of typhoid cases reported during the year is shown (1918, 89 cases) (1919, 58 cases). There has been an increase in the incidence of diphtheria, scarlet fever, and measles.

*Statistical*—980 new cases were examined in the clinic of which 214 were diagnosed as tuberculosis, as compared with 959 cases for year 1918 an increase of 21 cases. There has been some loss in clinic attendance, but this case can be accounted for by the fact that, though more new patients were examined, 86 less were diagnosed as tuberculosis, and but one or two visits to clinic were made by most of new patients.

A special effort has been made to persuade all exposed cases to come to the clinic for examination and more in the way of preventive work thus accomplished.

*Special*—In May, 1919, a campaign was started to persuade parents in the district to send children to clinic for Schick test and treatment of those found susceptible. The number of children given the test is not so great as we would have liked, as the parents explained that the test was being given in schools more conveniently located.

*Prospect Clinic*—During 1919 the clinic attendance was most satisfactory both from the viewpoint of total attendance and new cases admitted. The work done by all the physicians on duty has been highly satisfactory, their painstaking work and courteous treatment of patients being self-evident in the clinic attendance, as shown by the yearly report. During the year the staff made 6,861 physical examinations of patients and 364 visits to sick patients and complaints in the district.

The nursing service has been highly efficient and that our clinic attendance is larger is due to the social service work done by the nurses. The nurse in charge of the clinic has taken great interest in the patients and has made a large number of recommendations to hospital, sanatorium and preventorium. We have been very successful in placing patients and, while it effects our total clinic attendance somewhat, it is most satisfactory to the patients to know that everything possible is being done for them.

*Brownsville Clinic*—During the year a new activity has been added to our office, viz: the Schick test work. This indeed has become a very important adjunct to our already busy office.



## BUREAU OF PUBLIC HEALTH EDUCATION

### *Veterinarian Division.*

The Veterinarian Division reports the following for the year:

*Anti-rabic Work*—911 dog bites reported; 147 persons treated in anti-rabic clinic; 1,909 Pasteur injections given; 374 bitten persons advised in clinic; 923 dogs examined; 201 dogs destroyed; 29 cases of rabies (dogs); 4 cases of rabies (human).

*Glanders Prevention*—8,157 horses examined; 119 horses tested; 17 glandered horses destroyed; 2,000 horses tagged.

### *Division of Child Hygiene.*

*Midwives and Foundlings*—At the beginning of the year there were 512 midwives in the Borough holding permits. On December 31, 1919, there were 507. Permits revoked during 1919, 27. First inspections of midwives, 22; reinspections, 2,536; special visits, 2,051, making a total of 4,610. Every midwife holding a permit was visited at least once each month by a nurse.

All death certificates of persons dying of sepsis following pregnancy were investigated as follows:

Puerperal sepsis, fatal cases..... 62

Puerperal sepsis, non-fatal cases..... 33

At the beginning of the year 866 foundling permits were in force. On December 31, 1919, 824 permits were in force. Total inspections made, 7,323.

It is gratifying to note the reduction of the death rate of infants under one year of age in the Borough. The death rate of infants under one year was 77.4; the lowest infant mortality rate on record for the borough, and the lowest of the five boroughs for the year.

*School Medical Inspection*—The number of schools visited by our inspectors and nurses was 180 public schools, and 25 annexes, houses in separate and distinct buildings. The nurses assigned to schools have, on an average, 4,369 pupils and each inspector has about 12,000.

Contagious eye and skin diseases found in school are less in number on account of the vigilance of the inspectors and nurses and the co-operation of principals and teachers, with the exception of scabies, which was partly due to the return of overseas forces. Exclusions from school are less in number as the parents are becoming more acquainted with symptoms of contagious diseases, and are keeping the children home at the first signs of any contagious disease. Special efforts are made to hold special consultations with parents daily, and particularly on Saturdays. Excellent responses have been made.

### *Division of Food and Drugs.*

By the establishment of the Division of Food and Drugs in this Borough to handle local matters, much commendation of the Department has been received from associations of food dealers, on account of their ability



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to adjust local matters in the local Department office. This division during the past year, in addition to being of immense value in the prevention of infectious diseases, by their close supervision over the sanitary conditions in hotels, restaurants and public drinking places, has also closely supervised the condition of the Borough's food supply, both at its terminals, in warehouses, manufacturing establishments and retail stores, also by their co-operation and through their advice much foodstuffs have been conserved which might otherwise have been of no value. During 1919, by action of the Board of Health, no horses were slaughtered or horse meat permitted to be sold for human consumption after May 1st, 1919.

Despite our efforts for conservation, consignees have often refused to overhaul partly damaged or deteriorated consignments which resulted in a total loss of same. Their contentions were that market and labor conditions did not warrant their paying for overhauling. In some instances the discharging of cargoes on to unheated and improperly protected piers, or the shipping of perishable goods in unrefrigerated ships, caused rapid deterioration.

A large percentage of the condemnations were due to the unsettled economic conditions and the cancellation of war contracts, which caused large quantities of food on hand to deteriorate.

Department records show that a number of large condemnations of farinaceous foods were diverted into channels for animal food.

During the year 6,002 inspections were made relative to milk, of which were: stores, 2,223; wagons, 1,872; milk depots, 732; pasteurizing plants, 337; miscellaneous, 838, and the following samples were obtained and delivered to the Department of Health Laboratories for analysis:

Milk .....	2,871
Cream .....	1,860

Said samples were taken for chemical analysis and 1,386 samples of milk for bacteriological examination.

The chemical analysis of 4,731 samples of milk and cream delivered to the Laboratory resulted in prosecution of 437 violators for the adulteration of milk and cream.

*Exposure of Food on Streets*—The service of final warning notices and the prosecution of violators in 119 instances has practically eliminated this character of Sanitary Code violations.

*Cleansing of Utensils*—The service of numerous final warning notices, and the prosecution in 141 instances has tended to decrease the number of violations of this character.

### *Sanitary Division.*

The operation of the Sanitary Division under a Chief Sanitary Inspector has accomplished much during the year.

## BUREAU OF PUBLIC HEALTH EDUCATION

### BOROUGH OF THE BRONX.

*Assembly Halls and Theatres*—This class of premises were subject to careful inspection relative to light, ventilation, cleanliness and toilet facilities.

It was necessary in the early part of the year to institute educational programs in order that the proprietors of the assembly halls, amusement parks, meeting halls and other places of public assembly could thoroughly understand the policy of the Department of Health relative to this class of premises. As a result the conditions improved and all nuisances on premises were abated.

*Barber Shops*—All barber shops in this Borough were inspected and copies of the regulations furnished the owners. The general sanitary conditions (where necessary) were improved.

*Birds and Small Animals*—Premises where birds and small animals are for sale were inspected and kept under observation from time to time during the year.

*Bathing Beaches*—During the month of March the Assistant Sanitary Superintendent notified all owners of bathing beaches in this Borough of the necessity of completing all necessary repairs and insisted that the establishments be ready for inspection by this Division at such date as to permit the granting of a permit on the opening date. This assisted materially in reminding the owners of their responsibility and, in many instances, the request was complied with. During the year the Bronx Exposition Park was opened and this maintains, it is said, the largest bathing pool in the United States. All bathing beaches were operated as required by the official regulations.

*Camps*—The camps located at City Island, Throggs Neck, Orchard Beach, Edgewater and Fort Schuyler were kept under constant observation during the camping season. The individual camps show a tendency to increase. All campers were notified at the beginning of the season that they must not occupy camps until their applications were approved. The general condition of this class of premises seems to show a steady improvement and, from year to year, the owners show a willingness to co-operate and to improve conditions as suggested.

*Common Towels and Drinking Cups*—A survey of all theatres, department stores, fire houses and public places where common cups or towels might be in use was made. Where same were found they were removed forthwith with the result that all common towels and drinking cups have been dispensed with.

*Dogs*—A survey, from time to time, relative to violation of Section 17 of the Sanitary Code was made by patrolmen of the Health Squad and the inspectors of the Division, and where necessary summonses were served.

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Notices to all dog owners known and to every store where birds and small animals were sold were delivered by patrolmen and inspectors. A quantity of the notices were left in these stores to be delivered to dog owners who might call in the course of business.

### *Sanitary Engineer.*

A force of three per diem laborers and one assistant foreman from the yearly force were employed from March to December 31st on maintenance work, and a total footage of 1,072,463 feet of ditches were cleaned, and 8,695 feet of new ditches were dug.

This force was adequate to maintain the condition of the entire salt marsh area in the Borough, and no mosquitoes were found breeding on them.

Pelham Bay Park (about 450 acres) was maintained by Park Department and a contract let for this work for \$449. This park was kept under observation by the Mosquito Squad.

A fill in progress on a section of salt marsh by the N. Y., N. H. & H. R. R. and Westchester obstructs a number of drainage ditches, and arrangements were made to have the railroad oil these ditches at regular intervals and prevent mosquito breeding.

Considerable work was done in an inland section of Lohbaeur Park, Westchester, where mosquitoes were numerous. A decayed box culvert was removed, water course re-dug, additional ditches provided and conditions much improved. Fill in progress west of Eastern Boulevard at rear of St. Raymond's Cemetery, Westchester, and a great improvement has been made in this section during the year. Fill in progress at Hunt's Point and mosquito breeding places are practically eliminated. A large area is being filled at Clason Point and when completed this entire section which was formerly salt marsh will be immune from mosquito breeding.

Considerable breeding located in the section of marsh land between the lake and Mosholu Parkway and in Van Cortlandt Park, also in the section between Parade Grounds adjacent to Broadway and the Parkway. The attention of park officials was called to the matter and the lake was lowered and cleaned at regular intervals during the season. In the meantime oil was distributed at intervals on the section adjacent to Broadway up to November, when a permanent improvement was made by Health Department maintenance men.

Ditches cleaned, inland.....	23,006 feet
Ditches cleaned, salt marsh.....	1,049,457 feet
Ditches dug, inland.....	6,390 feet
Ditches, dug, salt marsh.....	2,305 feet
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Total cleaned and dug.....	1,081,158 feet

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### *Division of Preventable Diseases.*

Nothing of importance occurred in connection with communicable diseases during the year. The influenza epidemic, which began in September, 1918, ran into the early months of 1919. A small epidemic of typhoid fever occurred in the Mott Haven District.

### *Incidence of Communicable Diseases.*

	1918.	1919.
Diphtheria .....	1,868	2,251
Scarlet fever .....	864	718
Measles .....	3,935	1,384
Typhoid fever .....	149	109
Para-typhoid .....	.....	2
Chicken pox .....	679	723
Cerebro spinal meningitis.....	20	34
Poliomyelitis .....	26	4
Whooping cough .....	1,068	206
Influenza .....	20,808	3,360
Pneumonia .....	2,478	1,118
Smallpox .....	.....	1
Leprosy .....	.....	1

*Diphtheria*—There was an increase of 383 cases of diphtheria reported over 1918, and 804 over 1917. No reason can be assigned for this. The cases were scattered over the Borough.

### *Tuberculosis Clinic Report.*

	1918.	1919.
New cases .....	2,121	1,809
No. of revisits.....	12,934	18,811
No. of diagnosed cases.....	621	393
Total deaths .....	1,562	561

### *Occupational Clinic.*

	1918.	1919.
Food handlers examined.....	818	1,734
Bakers .....	394	619
Industrial .....	.....	18
Private physicians' cases .....	.....	1,020

In April a venereal disease clinic was opened at the Borough office with the following results:

### VENEREAL DISEASE CLINIC.

New cases .....	648
Revisits .....	175

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Specimens taken for Wasserman test.....	405
Smears and widals .....	22

### *Anti-rabic Clinic.*

	1918.	1919.
New dog bite cases given advice.....	484	238
New cat bite cases given advice.....	.....	10
Pasteur injections given .....	964	779
Cases investigated .....	.....	22

*Typhoid Fever*—During August, September, and October we had a slightly increased incidence of typhoid fever. Most of the cases occurred in census districts 3 and 4.

Seven of the cases were in children under 12 years of age, and a common source of infection was possibly milk, or an infected spring in the neighborhood.

### *Veterinarian Division.*

The Veterinarian Division reports the following for the year:

*Anti-rabic Work*—412 dog bites reported; 72 persons treated in clinic; 779 Pasteur injections given; 248 persons advised in clinic; 144 dogs examined; 126 dogs destroyed.

*Glanders Prevention*—7,602 horses examined; 69 horses tested; 19 glandered horses destroyed; 650 horses tagged.

### *Division of Child Hygiene.*

*General Impression of the Year's Work*—As one nurse expresses it, the "Syllabus on Hygiene has quieted down." This does not mean that interest of teachers has not increased, but that the overworked teacher is unable to develop into a sanitarian or hygienist such as the syllabus seems to require. Teachers' judgment in referring cases for diagnosis is about as good as could be expected but is only fair.

The Standard of Personal Cleanliness is improving and is, of course, most noticed in economically poorer schools, and is partly due to rising income. Some principals are very keen in the enforcement of hygienic measures and strict with teachers in respect to the syllabus. In such circumstances the use of the syllabus is rather more a text than a program but is having its beneficial effects.

Lack of clinical facilities is the great obstacle in this Borough in procuring prompt treatment for physical defects; large numbers of our children must travel far into Manhattan for such attention.

All agencies for service are strained nearly to the breaking point. So far as the Health Department is concerned the betterment of service requires more medical inspectors and more nurses. With from ten to twelve thousand



# BUREAU OF PUBLIC HEALTH EDUCATION

per nurse, written or oral discussions of betterment resolve into literature or oratory, and can only momentarily stimulate the faithful efforts of weary workers who see fields for advanced service but cannot reach them. The fact that such numbers are looked after so well is in itself a token of the value of the continually constructive effort of the general management of the Bureau.

## *Statistical Summary of School Work, Bronx Borough, 1919.*

Schools	Registration
1 High School .....	3,763
57 Elementary Schools .....	115,040
31 Parochial Schools .....	15,335
New Admissions to Public Schools.....	9,807
Examined by Private Physicians.....	1,181 (12%)
Examined by Medical Inspectors.....	8,626 (88%)
New Admissions to Parochial Schools.....	1,609
Examined by Private Physicians.....	121 (7.5%)
Examined by Medical Inspectors.....	1,488 (92.5%)
General contagious diseases found in school and excluded.....	141
Unreported cases of major contagious disease found at home.....	26
Contagious eye and skin diseases found in school.....	32,861
Exclusions from school.....	2,476
Visits and consultations.....	54,778
Vaccinations .....	11,727
(a) Re-vaccinations .....	317
(b) Certificates issued .....	6,403
Examinations for physical defects.....	30,080
Cases terminated .....	7,890
Summary of cases terminated—	
(a) Percentage of defective vision receiving glasses.....	38.3
(c) Percentage of cases of hypertrophied tonsils receiving treatment .....	22.4
(c) Percentage of cases of hypertrophied tonsils receiving surgical treatment .....	21.6
(d) Percentage of orthopedic defects receiving surgical treatment .....	0
Little Mother Leagues.....	21
Health Leagues .....	17
Clinics for school children.....	2

*Baby Welfare*—Statistical data of this work is discussed under school medical inspection and the remarks therein are applicable here.

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## *Statistical Summary of Baby Welfare Work, Bronx Borough, 1919.*

1.	Total number of babies under two years of age admitted.....	2,688
	(a) Number of these under one year.....	2,401
	(b) Number of these between one and two years...	287
2.	Total number of babies under one year admitted:	
	Under 1 month.....	173 7.2%
	1 to 2 months.....	603 25.0%
	2 to 3 months.....	360 15.4%
	3 to 6 months.....	642 26.9%
	6 to 9 months.....	414 17.5%
	9 to 11 months.....	209 8.0%
3.	Total number of babies under one year admitted:	
	(a) Breast fed exclusively.....	1,484 61.8%
	(b) Breast and bottle fed.....	435 18.2%
	(c) Bottle fed exclusively.....	482 20.0%
4.	Total number of babies under one year admitted:	
	(a) Sick with gastroenteritis on admission .....	121 5.0%
	(b) Sick with malnutrition on admission .....	135 5.6%
5.	Total number of babies under two years of age on the register of the stations, December 31, 1919.....	1,645
	(a) Number of those under one year.....	1,105
	(b) Number of those between one and two years...	540
6.	Total number of mothers to whom milk was distributed during the year .....	317

### *Midwives and Foundlings.*

As in this Borough all midwives are visited by one inspector, the work is perhaps more uniform than where a number of inspectors are employed who may not, as in our case, be giving time exclusively to this type of work.

So far as sore eye conditions and puerperal infections are concerned, results do not point to any serious incompetency on the part of the midwives in general.

*Foundling Keepers*—Except in the presence of wanton neglect and cruelty it is the conviction of our staff that foundlings are better off in almost any home than in the average institution. It is with extreme reluctance, therefore, that recommendation for revocation of a permit is made, and an open mind is held as to the restoration of permit when the habits and state of mind of a delinquent are represented as amended.

Our homes are supervised very closely, and are carefully graded. A list of vacancies is placed in the hands of the Babies' Welfare Association, and all inquiries for place are directed there. Custodians of children of

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tender years are directed to keep in touch with Baby Health Stations, and nurses and physicians in said stations pay particular attention to these patrons.

Prompt visits are made to all applicants, including those referred to us by associations for conservation of child life, and inquiries or requests from any society are welcomed and responded to.

Cordial relations are maintained with the Superintendent of the Gerry Society. He and his officers have been invited to lay before us any information they may have concerning homes, and their aid has been solicited and received in dealing with refractory cases.

In suggesting improvements, it occurs primarily to us that the average price paid for boarding is too small. Institutions should set an example by providing for more liberal pay. This is needed particularly for the institutional child.

### *Statistical Data of Midwife and Foundling Work, Bronx Borough, 1919.*

1.	Number of midwife permits in force January 1, 1919.....	145
	Number of midwife permits in force December 31, 1919.....	136
2.	Number of births attended by midwives.....	2,754
	Number of stillbirths attended by midwives.....	38
	Number of sepsis cases occurring in practice of midwives.....	1
	Number of midwives arrested and found guilty.....	0
	Number of midwives fined or imprisoned.....	0
3.	Number of sore eye cases reported.....	5
	(a) Reported by midwives.....	2
	(b) Reported by physicians.....	3
	(c) Reported by institutions.....	0
	(d) Reported by other organizations.....	0
	Number cured .....	5
4.	Number of cases of ophthalmia neonatorum reported.....	0
5.	Number of fatal cases of puerperal sepsis.....	9
	(a) Attended by midwives.....	1
	(b) Attended by physicians.....	2
	(c) Attended by institutions.....	6
	Number of non-fatal cases of puerperal sepsis.....	1
	(a) Attended by midwives.....	0
	(b) Attended by physicians.....	0
	(c) Attended by institutions.....	1
6.	Delinquencies of midwives:	
	(a) Homes found unclean.....	2
	(b) Bags found unclean.....	2
	(c) Person found unclean.....	2

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(d) Cases attended where mother died after confinement .....	0
(e) Failure to report births.....	0
(f) Failure to report stillbirths.....	0
(g) Delay in reporting births.....	0
7. Number of permits of midwives revoked for cause.....	1
Number of complaints against midwives.....	5
Number of expectant mother cases.....	18
8. Number of foundling keepers' permits in force January 1, 1919.	449
Number of foundling keepers' permits in force December 31, 1919 .....	387
9. Number of permits of foundling keepers revoked for cause....	1
Number of complaints against foundling keepers.....	20
10. Lectures by staff regarding work of foundling keepers.....	0
Lectures by staff regarding supervision of midwives.....	2

*Employment Certificates*—The number of certificates issued increased markedly during the year, owing to the conditions of the labor market.

We have given the Department of Education all the co-operation it has asked of us and, further, all we could think of. The attendance officers are given the greatest freedom in relation to matters in our files, and we have contributed our share in the examination of children brought before the tribunal in the Bureau of Attendance.

One of our inspectors, at one time, was assigned to the Municipal Court, to give such advice from a medical standpoint as the Court might require. All inquiries from the State Industrial Commission and from the Child Labor Committee have been answered freely, and we have placed ourselves at their disposal. We have kept in touch with the Child Labor Committee. The Borough Chief of this Borough was invited to take a responsible place on the staff of the National Child Labor Association, on recommendation of a member of this Committee.

The follow-up by school nurses, on temporarily withheld cases, has been attentive and thorough, yielding excellent results, as reports will show.

The following statistical data are submitted on the work in general:

## *Employment Certificate Work, Bronx Borough, 1919.*

1. Total number of employment certificates granted.....	6,753
(a) Summer vacation certificates.....	578
(b) Permanent employment certificates.....	6,175
2. Number of employment certificates in force January 1, 1919....	8,771
Number of employment certificates in force December 31, 1919..	8,820
Number of employment certificates expired during 1919.....	6,126
3. Number of children refused certificates for physical incapacity...	109

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(a) From Parochial Schools:		
1.	Malnutrition .....	1
2.	Cardiac disease .....	4
3.	Pulmonary disease .....	..
4.	Miscellaneous .....	..
(b) From Public Schools:		
1.	Malnutrition .....	11
2.	Cardiac disease .....	31
3.	Pulmonary disease .....	..
4.	Miscellaneous .....	62
4.	Total number of cases temporarily withheld.....	499
	(a) Defective teeth .....	140
	(b) Defective vision .....	317
	(c) Acute eye disease.....	..
	(d) Hypertrophied tonsils .....	7
	(e) Miscellaneous .....	35

### *Division of Food and Drugs.*

Activities of this Division embraced the supervision over the sale of foods and drugs in the Borough, and supervision over the sanitary conditions surrounding the handling of food and drugs.

The greater part of the food and drug work in this Borough consists of the inspection of food and drugs (milk included) in retail establishments. Necessarily the greater portion of the squad were assigned to this work.

Wholesale meat and produce markets required a great deal of attention, and one inspector gave the greater portion of his time to the inspection of these markets.

The milk work, which consists of the inspection and sampling of milk for chemical analysis, in the wholesale and retail establishments and on wagons, and also the investigation of conditions surrounding the sale of such milk, was taken care of by the district inspectors in the retail stores, and by one inspector at the wholesale depots and wagons. Inspection of drug establishments, wholesale and retail, was under the supervision of one inspector. This inspector, in addition to taking samples of crude drugs and patent medicines and prescriptions, also looked after the sanitary conditions in these establishments.

While all of the above special activities were given attention during the entire year, squads were assigned periodically to give their sole attention, on a given day, to one of the above activities. These special raids accomplished excellent results.

*Terminal Inspection*—The New Haven Railroad Terminal is the point of entry in this city for the produce that is grown in the New England section. The principal products that arrive at this terminal are potatoes from



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Aroostook County, Maine, and onions from the Connecticut River Valley. There is also a considerable quantity of northern apples shipped to this point.

This terminal market was covered daily, and approximately 150,000 pounds of assorted vegetables and 21,000 pounds of assorted fruit were condemned during the year.

*Factory Inspection*—The principal factories located in this Borough consist of candy manufacturers, frozen product manufacturers and soda water manufacturers. Of these the candy manufacturers predominate. There are several very large candy factories, where so-called hard candies are manufactured.

During the year, 138 inspections of the candy factories alone were made, and in every such establishment where hard candies were manufactured samples were taken and submitted for chemical analysis. The usual adulterant in this type of candy is sulphur-dioxide, but in none of the samples examined was such ingredient found.

All of the ice cream factories were put under permit, during the year, and several establishments located in Mount Vernon and New Rochelle, that shipped and sold cream in this Borough, were inspected and put under permit. In two instances, where insanitary conditions were found at a cream factory, and where no effort was made to comply with the regulations of this Department, court action was found necessary after denial of application for permit.

Thursday night bakery inspection was continued during the year, which accounted for a great portion of the eighty-five cases that were prosecuted for violations of Section 331B of the Sanitary Code. The total fines for the year, as a result of finding unsound eggs in various establishments, amounted to \$1,255, and a large portion of these violators were unscrupulous bakers. The fines imposed ranged from \$5 to \$100. There were 3,261 inspections made of bakeries during the year.

*Restaurant Inspection*—There were 1,665 inspections made of restaurants during the year, and practically all of the restaurants in this Borough are now under permit.

*Retail Inspection*—There were, during the year, 21,791 inspections made of retail establishments, as compared with 6,571 inspections of wholesale establishments. These establishments were inspected for the purpose of improving the sanitary conditions surrounding the handling of food, and inspecting the character of conditions of foodstuffs in the stores.

Although, in a great majority of instances, co-operation was obtained from the storekeepers and sanitary conditions improved where warnings were given by inspectors, it was found necessary, in 215 instances, to serve summonses as a result of dirty stores. The fines imposed in these cases amount to \$920.50.

Of 254 cases prosecuted, during the year, as a result of foodstuffs con-

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denmed (unsound eggs included), which cases resulted in fines totalling \$3,276 being imposed, a great majority of such cases were a result of unsound food being found in retail stores. Only in instances where there was some reason to believe that such unsound food was to be sold, were such cases taken to Court.

*Milk Inspection*—During the year, inspectors gave attention to the inspection of milk in the possession of wholesalers (at depots and on wagons) and to the inspection of milk in retail stores. Considerable attention was given to the sanitary conditions surrounding the handling of milk in retail stores, and the proper care of milk utensils by these storekeepers. A great deal, educationally, was accomplished by this work.

There were 891 samples of milk taken during the year for chemical analysis, eighty of which were found to be below standard. There were 512 samples of cream taken, 143 of which were found to be below standard. Not all of these low samples were found to be sufficiently low to warrant prosecution, there being 170 of these cases forwarded for prosecution. The total fines imposed, as result of adulterated samples of milk and cream, amounted to \$1,925.

The list of sour cream dealers on whom adulterated cream was found is extremely long.

In addition to the above cases, thirty-nine cases were prosecuted in court for failing to properly cleanse milk utensils. Fifteen cases for various other violations of the milk regulations, such as mislabeling, transferring milk on public highways, etc., were also prosecuted and fined.

*Meat Inspection*—During the latter part of the year, particular attention was given to the inspection of hogs on the twenty hog farms in this Borough, with the result that on three farms cases of hog cholera were located. On all of these farms quarantine was immediately established, and daily inspections made until the disease had disappeared. As a result of this outbreak, our veterinarian condemned 109 hogs weighing 2,900 pounds. Hog cholera serum, which was injected under the direction of this veterinarian, resulted in the saving of many of these animals.

Inspections were made, during the year, of 3,074 retail butcher shops. Inspections were made of 2,702 wholesale meat establishments, and 102 inspections were made of meat preserving establishments. In addition to these, 580 inspections were made of poultry slaughter houses during the year. In the latter establishments, in six cases where unwholesome poultry was found on the premises, prosecution was instituted. Convictions were obtained in all cases, and the fines ranged from \$10 to \$50 for each offense.

*Drug Inspection*—During the year, inspections were made of 1,233 establishments in the Borough. Particular attention was paid to the improving of sanitary conditions and to the sampling, from time to time, of various drugs and prescriptions.

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*Exposure of Foods*—Particular attention was given during the year to the exposure of meat on wagons in this Borough. From time to time squads were assigned to cover a wholesale meat market, and serve summonses on drivers of wagons who left the market with meat uncovered. Although a few summonses were served and small fines imposed, as a result of this work, during the earlier part of the year, later inspections disclosed that the drivers of meat wagons were properly covering their meat.

Upon request, a patrolman was assigned to the Division of Food and Drugs, during the summer, to investigate the exposure of food on the streets, and serve summonses where violations were found. This work was deemed very essential, at that time, but after two weeks of successful effort this patrolman was transferred and taken away from the work entirely.

During the entire year, 122 summonses were served as a result of food-stuff being offered for sale and not properly protected from dust and dirt, and fines amounting to \$282 were imposed.

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### BOROUGH OF QUEENS.

#### *Sanitary Division.*

In almost all particulars the work in the borough has improved in the past year as compared with 1918. We find that of total inspections made by 7 field inspectors in sanitary work there was an increment of 1,600 in 1919, as compared with 1918, and this despite a force of 8 in the latter year. In arrests we also exceed former figures, 981 in 1919, as compared with 379 in 1918. In fines we collected \$519 more in 1919 than 1918. Personal abatement of nuisances showed an increase of 600.

One incinerator unit has been added at Flushing to the number of 3 in the Borough, and we now have stations at Long Island City, Maspeth (East Williamsburgh), Arverne and Flushing. These plants have solved many trying sanitary problems and have stopped many acrimonious complaints. Particularly has this been noticeable in the Rockaways in the past two seasons, where the inadequate facilities for disposal had been the occasion of serious discontent.

There have been the progressively increasing number of sewer connections in the borough and, as a corollary, the abolition of numbers of cess-pools and privy vaults. In mosquito plots filled, oiled or drained the figures are indicative of most intense activity on our part.

*Division of Food and Drugs*—This unit, from a force of 3 inspectors has grown to 14, including division chief, supervisor, field inspectors, veterinarian, clerks, stenographer and patrolman. It is now a very complete and satisfying unit.

#### *Division of Institutional Inspection.*

We believe that the work in this particular has never been so systematically and efficiently accomplished or done with such exclusive and specialized attention as in the past year. The institutions, we believe, have also felt this additional expenditure of time offered them and have co-operated and co-ordinated readily in all our identities outlined to them.

Our records show:

No. of institutions .....	38
No. of physical examinations (primary) .....	1,608
No. of physical examinations (defectives) .....	234

#### *Division of Sanitary Inspection.*

The early part of the year showed the decline and finish of the epidemic of influenza that broke out in the fall of 1918. During this period the force was busily engaged in frequent inspection of all places of public assembly, public conveyances, etc., and all special regulations adopted by the Board of Health for prevention of influenza were enforced.

*Fly Breeding Control*—Most important activity in this respect was the inspection of stables, of which 2,707 were made, and attention paid to proper disposal and treatment thereof so as to prevent fly breeding.

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*Public Water Supply*—The public water supply of the Borough was kept under regular observation and samples collected for analyses, but in a few instances the result of these examinations showed “suspicious,” when some local surrounding insanitary conditions were corrected and re-examinations of the supplies showed same to be potable.

*Heat Complaints*—During the colder part of the year our force was kept busy answering lack of heat complaints, owing to the recently enacted section of the Sanitary Code regulating this question. In the majority of instances, these complaints were abated by personal effort, it being found necessary to take but one case to court.

*Other Special Activities*—A great amount of work was also expended by this Division in the inspection and control of the following classes of premises, in which detailed regulations of the Board of Health have been adopted, under various sections of the Sanitary Code, and have to be enforced:

	Inspections.
Barber shops .....	193
Baths .....	281
Camps .....	785
Comfort stations .....	284
Horse shoeing establishments.....	43
Laundries .....	69
Lodging houses .....	36
Rendering plants .....	36

## Sanitary Engineer.

One million three hundred seventy-eight thousand two hundred (1,378,200) feet of ditches were cleaned in the Borough, in Jamaica Bay section, and, in addition, 184,000 feet of ditches were cleaned at Far Rockaway, and 72,400 feet of ditches cleaned at Arverne.

On the north side of the Borough an average force of four men were employed to maintain the ditches installed and clean the salt marsh area.

Co-operation with Government officials continued at Fort Tilden, Rockaway Point, with reference to area on Government reservation and adjacent thereto.

	Feet.
Ditches cleaned, salt marsh, Jamaica Bay Section.....	1,378,200
Ditches cleaned, salt marsh, Arverne.....	72,400
Ditches cleaned, salt marsh, Far Rockaway.....	184,000
Ditches cleaned, salt marsh, Little Neck.....	7,570
Ditches dug, salt marsh, Little Neck.....	750
Ditches cleaned, salt marsh, College Point.....	422,790
Ditches cleaned, salt marsh, Flushing, Corona, Elmhurst.....	559,025
Ditches dug, salt marsh, Flushing, Corona, Elmhurst.....	300



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Ditches cleaned, inland, Guttman Swamp.....	51,500
Ditches cleaned, inland, Mill Creek.....	12,050
Ditches dug, inland, Mill Creek.....	6,200

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Total cleaned and dug..... 2,694,785

## *Division of Preventable Diseases.*

The accomplishments of the service during the year are interesting in many respects. The statistics show an increase in service in the field and office. This is gratifying considering that there has been a reorganization under a borough unit developed during this time. This change in method of administration called for an entirely different system, both in the borough and branch offices, than that employed in the health districts plan, and the formation of new filing records and tabulation of activities on a borough basis.

The community service of the branch offices has been revised and the field broadened, comprising occupational clinics, daily, tuberculosis clinics, held three afternoons and one night weekly at each office, also venereal disease clinics, at the Queens Plaza and Jamaica offices, to serve both northern and southern sections of the borough.

The inauguration of Schick test service, with the demonstration centers for physicians in each branch office was a new departure and achieved considerable results.

The prevalence of influenza in the earlier months of the year, and the increased incidence of diphtheria and scarlet fever, together with the above activities, engaged the attention of the borough force; and, considering the growth and the spreading out of the population over a large expanse of territory, the work was performed satisfactorily.

The incidence of typhoid fever in the borough was noticeably lower than during the preceding year. Intensive sanitary surveys were made in each case, and conditions corrected by official action, when found bad. Bathing in contaminated pools in Richmond Hill Circle, where several child cases developed, was stopped and no more cases followed. Strict supervision of all carriers was maintained, and new ones discovered and placed under surveillance. Two borough cases were traced to an outbreak in Port Jefferson, L. I.

Figures showing our increased service follow :

## VISITS BY STAFF COMPARED TO PREVIOUS YEAR.

	1919	1918
Nurses—visits to general contagion.....	16,257	8,336
Nurses—visits to tuberculosis.....	7,597	7,352
Inspectors—visits to cases.....	916	858
Schick Tests .....	693	0
Injection of toxin-antitoxin.....	657	0

## ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

The veterinary division of this office maintained an excellent service in the investigation of dog-bite complaints, supervision of rabid dogs and follow-up of the latter, and by giving prompt advice in all cases.

The enforcement of Section 21 compelling owners to have their horses tested and branded was a new departure, and was urged to the limit of our facilities for handling the work.

Another new development was that of the venereal disease clinics, organized in April, and advertised by an intense propaganda. The lack of treatment facilities in this borough inhibit the progress of this work.

The occupational clinics showed a distinct improvement, both as to clinical examinations and to the amount of service.

### OCCUPATIONAL CLINIC WORK.

	1919	1918
No. of food handlers examined in clinics.....	2,999	716
No. of food handlers examined by private physicians..	3,243	56
Diphtheria and Croup.....	1,158	811
Scarlet Fever .....	445	395
Typhoid Fever .....	67	75
Poliomyelitis .....	6	6
Cerebro-Spinal Meningitis .....	24	17
Variola .....	2	1
Measles .....	529	2,582
Liberty Measles .....	24	133
Whooping Cough .....	131	437
Chicken Pox .....	377	218
Mumps .....	158	84
Tetanus .....	6	4
Rabies .....	1	0
Anthrax .....	0	1
Typhus .....	1	0
Influenza .....	1,476	10,388
Pneumonia .....	529	1,665
Lethargic Encephalitis .....	3	1
Tuberculosis .....	542	680
Field Service by Borough Staff—Contagion.....		16,257
Number of visits, by Nurses—Tuberculosis.....		7,597
By Inspectors .....		916
Number of diphtheria immunizations.....		138
Number of typhoid immunizations.....		72
Number of injections of tetanus antitoxin (prophylactic).....		6
Schick Tests and Active Immunizations (Exclusive of Institutions)		
Number of tests.....		693
Number of injections—toxin-antitoxin.....		657

## BUREAU OF PUBLIC HEALTH EDUCATION

### *Veterinarian Division.*

The Veterinarian Division reports the following:

*Anti-rabic Work*—333 dog bites were reported; 483 dogs examined; 49 dogs destroyed; 6 cases of rabies (dogs); 1 of rabies (human).

*Glanders Prevention*—1,006 horses were examined; 48 horses tested; 6 glandered horses destroyed; 250 horses tagged.

### *Division of Child Hygiene.*

In the Borough of Queens a combined plan of service between the Division of Child Hygiene and Preventable Diseases has been maintained, viz., all employees do work for both Bureaus.

The entire district medical service has been supplied by the Division of Child Hygiene during the past year, as no medical inspectors, diagnosticians, etc., have been assigned to duty in the Borough by the Division of Preventable Diseases. In addition to school and district work for the Division of Child Hygiene, medical inspectors have been required to perform service as diagnosticians in their respective districts during the day, on week days. Saturday afternoon, Sunday, holiday and night calls for diagnostician service have been attended to by the assignment to this duty of the Borough Chief of Child Hygiene, the District Medical Supervisor, and the Borough Chief of the Division of Preventable Diseases.

The detail of a medical inspector from the Child Hygiene force to attend to the work in institutions has further reduced the force available for strictly child hygiene work. This medical inspector reports, through the Assistant Sanitary Superintendent, directly to the Chief of the Division of Institutional Inspection, and the Division of Child Hygiene receives no credit for the work performed.

All nurses in the borough have worked under the same general plan as the medical inspectors. Their work has consisted of a combination of the work of the Bureaus of Child Hygiene and Preventable Diseases. School nursing service has been given by all district nurses in the morning hours, and district visiting on child hygiene work and preventable disease work performed in the afternoon hours.

This plan has the advantage of increasing the number of nurses visiting the schools, giving each nurse a lessened number of schools to cover than would be the case if the service was divided into Bureaus. This allows the schools to receive the visits of nurses more frequently. It also has the advantage of offering the opportunity for prevention of overlapping of service of nurses in district visiting, and permitting the nurses to group their visits due on all work in such a way as to save time and effort.

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## SCHOOL MEDICAL INSPECTION STATISTICS.

Schools.	Registration.
6 High.....	8,271
94 Elementary.....	70,597
28 Parochial.....	16,995
Total register.....	91,863

	Public.	Parochial.
New admissions to school.....	8,983	2,380
Examined by private physicians.....	507	144
Examined by medical inspectors.....	8,476	2,136

The following tables represent the general results of the work of school medical inspection, 1918 and 1919 compared:

## GENERAL CONTAGIOUS DISEASES FOUND IN SCHOOL AND EXCLUDED.

		Diph- theria.	Scarlet Fever.	Measles.	German Measles.	Chicken Pox.
1919.....		3	2	5	0	22
1918.....		1	5	36	11	9
	Mumps.	Whooping Cough.	Tuber- culosis.	Gonor- rhoea.	Syphilis.	Misc.
1919.....	11	2	3	..	..	5
1918.....	15	19	..	..	..	..

## CONTAGIOUS EYE AND SKIN DISEASES FOUND IN SCHOOL.

	Pedi- culosis.	Tra- choma.	Con- junct.	Ring- worm.	Scabies.	Im- petigo.	Favus.	Mol- luscum Contagi- osum.
1919.....	18,198	95	3,679	475	339	3,437	134	447
1918.....	11,734	236	3,431	190	184	1,697	64	104

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Visits Made to.	Inspector.		Nurse.		Total.	
	1918.	1919.	1918.	1919.	1918.	1919.
Contagious diseases.....	842	91	3,945	1,842	4,787	1,933
Physical defect cases.....	1,445	849	18,809	17,979	20,254	18,828
Dispensaries.....	.....	.....	574	749	574	749
Special.....	177	527	6,416	11,680	6,593	13,207
Totals.....	.....	.....	.....	.....	32,208	34,717

## WORK OF EYE CLINIC AT PUBLIC SCHOOL NO. 81.

	1918.	1919.
Total number of patients.....	1,279	1,741
Total number of revisits.....	1,708	3,521
Total number of visits.....	2,987	4,262
Total number discharged.....	1,100	1,160
Cured.....	1,077	1,156
Dropped.....	23	4
Total number of treatments.....	1,379	4,508
Refractions.....	2,987	2,754
Prescriptions filled.....	1,077	2,137
Prescriptions for glasses.....	1,102	1,079

*Foundling Keepers*—Medical inspectors made 695 visits inspecting homes of 435 foundling keepers. Nurses made 3676 visits, re-inspecting and controlling the same.

*Employment Certificates*—During the year, the work of issuing employment certificates has been conducted from four centers in the Borough, these centers being the four Branch Offices of the Department of Health in this borough, viz. Jamaica, 372 Fulton St.; Ridgewood, 753 Onderdonk Ave.; Plaza, 138 Hunter Ave., L. I. City; Corona, 127 46th St., Corona.

The issuing of such certificates at these offices, while a great convenience to the people in saving them time and expense in travel, adds greatly to the burden of the nursing and medical inspection forces of the Bureau.

## NUMBER OF EMPLOYMENT CERTIFICATES ISSUED DURING THE YEAR.

	1918.		1919.	
	Summer.	Regular.	Summer.	Regular.
Jamaica.....	91	1,262	87	1,251
Plaza.....	150	1,277	129	1,154
Ridgewood.....	3	1,300	17	1,112
Corona.....	...	639	7	394
Borough Totals.....	244	4,478	240	3,911



## ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

### BOROUGH OF RICHMOND.

The appended reports of the Bureaus of Preventable Diseases, Child Hygiene, Food and Drugs, and of the Sanitary Bureau contain detailed accounts of the activities of the year.

#### *Sanitary Division.*

*Mosquitoes*—Notices or orders have been issued to all owners of property upon which stagnant water is ponded, affording breeding places for mosquitoes. Early in January, several tours of inspection were made. As a result of these inspections, a very definite plan of action was decided upon and several conferences were held with the sanitary inspectors and patrolmen of the Health Squad.

All owners of property upon which stagnant water was ponded were notified by letter of a conference to be held in the office of the Assistant Sanitary Superintendent. Accordingly, twenty-five of the larger property owners called and many letters were received from others, stating their inability to be present at that time. Arrangements were made and these owners were interviewed at a later date. The Assistant Sanitary Superintendent addressed the assembled owners and discussed the mosquito situation in general, after which the individual cases were given particular attention. All expressed a willingness to cooperate with the Department and agreed to carry out, as far as possible, suggestions made.

*Flies*—Every stable in the Borough of Richmond was regularly inspected. Inspectors were directed to pay particular attention to the proper disposition of manure. Every inland dump was inspected regularly and in cases where the dump was found not properly maintained, the Superintendent of the Street Cleaning Department was at once notified, and reinspection made within three days to see that the nuisance found was corrected. The inspectors were directed to see that all garbage cans were properly covered, and yards maintained in a cleanly condition. At the beaches regular inspections were made during the entire season, re proper care of garbage, and where any violations were found, summary action was taken. On all farm land where manure was stored the owners were instructed in the proper treatment of manure. Inspections were made, regularly, to see that the storing of manure was not attendant with nuisance. Many truck gardens were inspected and in every case where manure was used as fertilizer, fly preventive measures were insisted upon.

*Bathing Establishments*—All proprietors were notified in April that they would not be allowed to conduct business without a permit from this Department and were instructed to have their premises ready for inspection so that permits could be obtained in time.

The beaches and bungalow colonies were inspected, daily, during the entire season. Saturday of each week was set aside for an intensive campaign of the beaches and bungalow colonies. Where any violations were

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found, summary action was taken. A serious problem of the beaches is the lack of proper sewerage, necessitating very close supervision of all privy vaults and cesspools. The beaches are supplied with city water. Formerly, a shore inspector was on duty on these beaches. Owners were directed to clean the beach in front of their establishments as often as required.

*Water Supply*—A considerable portion of Richmond Borough is not supplied with city water. The only source being from driven wells. An inspection of these wells was made and if there was any suggestion of pollution or contamination, a sample of water was forwarded to the Laboratory for bacteriological examination. In the presence of a case of typhoid fever, samples from all wells in the vicinity were taken and the well on patient's premises was ordered discontinued. Examination of several wells showed the water to be of suspicious quality. Owners of these wells were cautioned against the use of this water.

### *Sanitary Engineer.*

The work in this Borough is varied, comprising installation of culverts, building of sluiceways, cleaning of old and digging of new ditches, cleaning and re-digging of water courses, and the installation of drains, details to other Boroughs in cases of emergency, and the cleaning of ditches and drains on highways. This refers to all the salt marsh area and inland swamps in the Borough.

New ditches dug, inland.....	78,420 feet
New ditches dug, salt marsh.....	76,801 feet
Ditches cleaned, inland.....	136,644 feet
Ditches cleaned, salt marsh.....	845,641 feet
Total truck mileage.....	10,662 miles
Total oil used.....	100 bbls. (5,000 gals.)

### *Division of Preventable Diseases.*

The following is a tabulation, for the years 1918 and 1919, of infectious diseases reported:

Disease.	Cases.	
	1918.	1919.
Diphtheria.....	221	318
Scarlet fever.....	88	111
Measles.....	725	461
Smallpox.....	1	1
Pertussis.....	275	64
Cerebro spinal meningitis.....	25	11
Poliomyelitis.....	...	1
Tetanus.....	1	1
Anthrax.....	2	...
Chicken pox.....	89	157
Liberty measles.....	50	10
Mumps.....	45	140
Typhoid.....	19	24
Pulmonary tuberculosis.....	145	198
Influenza.....	6,118	796
Pneumonia.....	493	330

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*Diphtheria*—Among the 318 cases of diphtheria reported, 42 were secondary cases. 1,963 visits were made to these cases, and 2,315 cultures were taken. These figures include trial cultures taken on other members of the families. The average number of cultures taken for each case was 7. Immunizations to the number of 240 were performed by diagnostician.

The Schick test was recommended to 166 families, and 32 tests were performed. In all cases of diphtheria, the house in which the case occurred was canvassed by the nurse, and the Schick test recommended for children.

*Scarlet Fever*—Number of nurses' visits to these cases were 399; 14 were secondary cases.

*Measles*—Number of nurses' visits to cases of measles were 357. There were 107 secondary cases.

*Pertussis*—Number of nurses' visits to cases of pertussis were 57. There were 26 secondary cases.

*Smallpox*—One case of smallpox occurred in September. The patient was a colored woman reported by the Staten Island Hospital. She lived in West New Brighton and gave no out of town history. Thirty-one vaccinations were performed at the time, 17 in the Staten Island Hospital, and 14 persons with whom the patient had been in contact, before entering the hospital, were also vaccinated. Residents of the two family house in West Brighton, from which the patient had been removed, and of a house in New Brighton where the patient had done laundry work, were kept under close observation for 21 days. No secondary cases developed.

*Chicken Pox*—In every case where patient was over 16 years of age the diagnostician was assigned to verify diagnosis.

*Poliomyelitis*—One case occurred. There were 13 nurses' visits made.

*Encephalitis*—One fatal case was reported in a child one year of age.

*Typhoid Fever*—147 nurses' visits were made to typhoid fever cases. Three cases occurred in the Marine Hospital were listed, but not investigated. One secondary case occurred. There were 8 possible out of town infections. Source of infection of the remaining cases could not be traced. Fourteen exposed persons were immunized. Seven persons took the prophylactic immunizations prior to going out of town.

Of the six typhoid carriers, which were listed in the Borough of Richmond, one case moved to New Jersey and another was admitted to Riverside Hospital. Of the remaining cases, three are apparently convalescing, and one case remains active.

*Cerebro-Spinal Meningitis*—Nurses' visits to these cases were 23 in number.

*Tetanus*—One fatal case was reported in a child, 9 years of age.

*Nurses' Visits*—Measles and pertussis cases were assigned to nurses for one visit, during which instructions were given as to precautions, cleaning, and readmission of children to school. The major infections were kept

## BUREAU OF PUBLIC HEALTH EDUCATION

under observation by the nurses until the cases were ready to be terminated. In case of removal to hospital, assignments were given to nurses to ascertain home conditions, and exclude school children and foodhandlers for the incubation period. The initial visit to cases of cerebro-spinal meningitis and poliomyelitis was made by the diagnostician.

*Tuberculosis*—The following table gives a summary of this work:

	1918.	1919.
Private physicians' cases . . . . .	32	37
At home cases . . . . .	97	107
Health Department clinic cases . . . . .	9	15
In hospital . . . . .	54	54
Out of town . . . . .	40	36
Not found . . . . .	20	18
Total . . . . .	252	267

*Venereal Clinic*—This was opened on May 1st and seventy-seven cases treated.

### *Veterinarian Division.*

The Veterinarian Division reports the following:

*Anti-rabic Work*—85 dog bites; 61 dogs examined; 12 dogs destroyed; no cases of rabies (dogs); no cases of rabies (human).

*Glanders Prevention*—280 horses were examined; 14 horses tested; 7 glandered horses destroyed; 100 horses tagged.

### *Division of Child Hygiene.*

*Boarded-Out Children*—There are in the Borough 134 foundling homes, having permits to board 337 children; 14 of them have no children; 26 have only part of the number allowed them by permits, and the remaining 94 have their full capacity, totalling 276 children actually in board, and leaving available homes for 61 children.

Following an inspection of the premises by the medical inspector, to ascertain the condition before granting the permit to board children, a monthly visit is made by the nurse. During these visits instructions are given as to the general care of the children and special attention given to any particular case that may arise. Every effort is made to get the foundling keepers who board infants to take advantage of the privileges offered them by the Baby Health Station. This is difficult to accomplish because of the large area over which these homes are scattered, and the poor transportation facilities of this Borough. To offset this, there are many advantages that are not found in the more crowded sections of the city, such as play



## ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

yards surrounding the homes, more sunlight and fresh air available for the sleeping rooms.

During the past year it was necessary to revoke one permit. This case was one in which the permit was granted under favorable conditions, but, later, the foundling keeper took back to her home one of her own children who is mentally deficient, as well as a mentally deficient child from another source. When these conditions were discovered, and request made for her to give up the mentally deficient children, the foundling keeper refused to do so, and it became necessary to revoke her permit.

*Baby Health Stations*—At all times at the station, and during the home visits, the nurse makes every effort to encourage mothers to breast-feed the babies. There has been a greater supply of milk dispensed than in previous years, regardless of the increased cost. Because of the activities in instructing mothers in the importance of the best grade milk for themselves and babies, many of the mothers deprive themselves of other things to obtain sufficient funds to get better grade milk, and in those cases where financial conditions will not permit, aid has been obtained from various neighborhood organizations.

*School Medical Inspection*—The general sanitary condition of the public and parochial schools in this Borough is unusually good and, with one exception, there is no marked over-crowding in the school rooms. This exception is at Public School No. 17, where the registration is several hundred more than the normal capacity of the building. Plans for a new building have been approved for some time, but construction has not been started. The overcrowding at this building necessitates that the medical inspections be done under unfavorable conditions.

During a portion of 1919, there were times when the full quota of inspectors and nurses were not available, but towards the latter part of the year this was remedied and a fair organization and distribution of the work was accomplished.

### EXAMINATIONS FOR PHYSICAL DEFECTS.

Number of pupils examined .....	3,353
Number of pupils showing defective vision.....	118— 3%
Number of pupils showing defective hearing.....	8— 2%
Number of pupils showing defective breathing.....	302— 9%
Number of pupils showing hypertrophied tonsils.....	409—12%
Number of pupils showing defective nutrition.....	151— 4%
Number of pupils showing cardiac diseases.....	38— 1%
Number of pupils showing pulmonary diseases.....	4— 1%
Number of pupils showing orthopedic defects.....	14— 3%
Number of pupils showing defective teeth.....	1,633—49%



# BUREAU OF PUBLIC HEALTH EDUCATION

Total number of defects.....	2,685
Number of cases vision not tested.....	454
Number of re-examinations.....	671

## GENERAL CONTAGIOUS DISEASES FOUND IN SCHOOL AND EXCLUDED.

Diphtheria .....	1
Measles .....	18
German Measles .....	1
Chicken Pox .....	17
Mumps .....	9

Vaccinations	Primary	Secondary	Certificates Issued
At Borough Office.....	606	52	423
In the Schools.....	1,606	69	1,301
Totals.....	2,212	121	1,724

The principals of the schools seem to appreciate their responsibility in obtaining the consent of the parents for the vaccinating of their pupils, and co-operate in every way with the schools' nurses to obtain the vaccination of each pupil, when necessary.

In only one of the schools in this Borough has it been possible to establish special classes for nutrition, but the nurses have been able, in many instances, to influence the mothers to allow their children, if under-nourished, to bring suitable lunches to school, daily, and the people co-operate in this effort to bring the children up to more nearly normal nutrition.

The very small number of cardiac cases found in the routine medical inspection has not warranted an attempt to establish special cardiac classes in any of the schools.

The adoption by the Department of Education of the syllabus in hygiene has resulted in a marked improvement in the co-operative work of the teachers with the medical inspectors and nurses, as evidenced by the number of pupils that are referred for inspection. A decided improvement has been noted in the general cleanliness of pupils, particularly regarding oral hygiene. There are decided advantages in the present system of early detecting and excluding pupils suffering from contagious diseases. The only obstacle to contend with in this matter is an occasional lax teacher, who fails to make an efficient inspection of the pupils, but this is a rare occurrence.

# ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

## SCHOOLS REGISTRATIONS.

Schools.	Registrations.
2 High .....	1,168
37 Elementary .....	15,145
9 Parochial .....	1,712
Total .....	18,025

## *Division of Food and Drugs.*

*Food Adulteration*—Condemnations of assorted foodstuffs were made where the same were found unsound and dangerous for human consumption; where milk and cream were found to be adulterated, prosecutions were instituted. Hearings were given in some cases where foodstuffs were found in an unwholesome condition. Prosecutions were instituted where cases warranted.

*Exposure of Foodstuffs*—Summonses were served and cases prosecuted in thirty-one cases of food exposure; where the desired results were not obtainable by personal effort, warning letters or hearings were given. Good results have been achieved, and violations of this character greatly reduced.

*Cleansing of Utensils*—Regulations providing for the cleansing of utensils have been well observed during the year. Frequent inspections of restaurants and cafes, warning letters and hearings given violators, resulted in only six summonses being served during the year. This is also partly due to raids conducted by this Division during the summer of 1918, when we closed about 18 eating and drinking cafes, by Board Orders, and served summonses on others. Activities of this character having a wholesome effect in small communities, such as this Borough.

*Terminal Inspections*—These have improved the method of handling and caring for foodstuffs arriving from foreign ports, in that more frequent inspections are made. All steamships are met by the inspectors, and foodstuffs carefully inspected; where cargoes are found damaged, embargoes are placed on same. Where consignee is required to move foodstuffs so embargoed to another Borough, permission is given him, and the Borough to which foodstuffs are removed is notified, so there is an unbroken supervision kept on embargoes until final disposition.

The supervision of dairies has improved, in that frequent inspections are made. The herds of dairy cows, where Grade A Raw milk is produced, have been put in good condition physically. All cows not having been tested within the year, have been tested under the supervision of the veterinarian. All cows, entering the Borough for dairy purposes, are checked up and suspects excluded. Some attention is given to private cows, to see that sanitary conditions prevail.

## BUREAU OF PUBLIC HEALTH EDUCATION

Bakeries and other retail food stores are more frequently inspected, and conditions have been much improved. Where violations of the Sanitary Code are found to exist on a second inspection, the owner is told by letter to call at the office to explain why the violation has not been removed. In nearly all cases, a talk with the Borough Chief brings about the desired results. In some cases, warning letters are effective, and by this method we gain gratifying results, and are gaining the good-will and the co-operation of the people with whom we deal.

Restaurants and cafes along the water front have been brought up to a better sanitary condition. Adequate hot water systems have been installed, walls and ceilings painted, instead of papered, and toilets vestibuled and kept in sanitary condition.

### *Summary of Veterinarian Activities.*

*Cattle*—Supervised tuberculin test of Grade A herds; physical examination of cows in Grade B herds; inspections of cows kept under Bang system; inspections of cows for other infectious and contagious diseases.

*Meat Inspection*—Passing on carcasses for food, in so far as any disease is concerned.

*Hogs*—Immunization of New York City Farm Colony herd for hog cholera, vaccinated 200; herd at Sailor's Snug Harbor, 140; total 340. Preventive inoculation with serum in herds in which disease started.

*Poultry*—Roup investigated—one outbreak of this disease among poultry; advised sanitary measures and treatment for same.

## BUREAU OF RECORDS.

### *Vital Statistics*

The year just ended has been a remarkable one in that the death rate has reached the lowest level ever recorded since the establishment of accurate vital statistics fifty years ago. The death rate for the year was 12.39 per 1,000 of the population, as compared with a rate of 16.71 in 1918, and 13.94 for the five-year period 1913 to 1917, inclusive. The death rate at the time of the organization of the Board of Health fifty-three years ago was a little over 28 per 1,000 of the population, which compared with the death rate of 12.39 shows a reduction of more than 50 per cent. in the mortality of the city. Broadly speaking, where two persons died fifty years ago out of every 1,000 of the population, only one died during the past year.

The accompanying table shows chiefly the experience of the year just passed with that of the average of the quinquennium, 1913 to 1917; this comparison being chosen in order to eliminate the effect of the great epidemic of influenza in the year 1918, thus constituting a fairer basis for comparison. By this a decrease of 9,327 deaths is shown.

#### DEATHS FROM PRINCIPAL CAUSES.

*Average for Quinquennium, 1913-17, as Compared with 1919.*

	Corrected Average 1913-1917.	Year 1919.	In- crease.	De- crease.	Year 1918.
All causes.....	83,760	74,433	.....	9,327	98,119
Typhoid fever.....	324	121	.....	203	196
Typhus fever.....	1	.....	.....	1	.....
Smallpox.....	.....	.....	.....	.....	.....
Measles.....	631	218	.....	413	790
Scarlet fever.....	322	136	.....	186	177
Whooping cough.....	425	161	.....	264	665
Diphtheria.....	1,382	1,240	.....	142	1,245
Influenza.....	598	4,830	4,232	.....	12,562
Tuberculosis, pulmonary.....	9,574	7,396	.....	2,178	8,779
Other tuberculosis diseases.....	1,489	1,103	.....	386	1,318
Cancer.....	5,032	5,141	109	.....	4,931
Apoplexy and softening of brain.....	1,006	870	.....	136	1,057
Organic heart disease.....	11,400	10,429	.....	971	12,105
Bright's disease and ac. nephritis.....	6,596	5,000	.....	1,596	5,269
Acute bronchitis.....	792	547	.....	245	760
Lobar pneumonia.....	6,554	6,192	.....	362	13,641
Broncho pneumonia.....	4,927	4,787	.....	140	6,987
Diarrhoeal diseases, under 5 years.....	3,876	2,475	.....	1,401	2,556
Congenital diseases.....	4,814	3,845	.....	969	4,234
Accidents.....	4,176	3,787	.....	389	4,202
Homicides.....	305	277	.....	28	245
Suicides.....	956	702	.....	254	724
Cirrhosis of liver.....	813	383	.....	430	433
Alcoholism.....	625	176	.....	449	252
Poisoning, wood alcohol.....	4	62	58	.....	4

## BUREAU OF RECORDS

The two causes that have shown an increase have been cancer and influenza. It will be remembered that, in the first three months of the year, the recrudescence of influenza appeared, with the result that there was a great increase in the number of deaths reported therefrom, as well as in the deaths reported from the acute respiratory diseases. The increase in the pneumonias and bronchitis, however, was gradually, month by month, lowered as compared with the previous years, until finally the increase was wiped out and a decrease among these two causes was shown by the end of the year. A noteworthy decrease was the unprecedented drop in the mortality from tuberculosis of the lungs. It was evident that during the epidemic of influenza that persons suffering from pulmonary tuberculosis was not at all affected by the prevailing epidemic. Apparently tuberculosis conferred a relative degree of protection as against influenza, so that the mortality from the former was not increased by reason of the epidemic.

The mortality rate of infants under one year of age, which is considered a reliable index of the sanitary conditions prevailing in a community, reached the low record of 82 per 1,000 of the children born. This is the lowest infant mortality rate on record for the city. That for the year previous was 92; the year previous to that 89. In passing it might be added that the decrease in the infant mortality rate since the organization of the Greater City in 1898 is somewhat over 50 per cent.

Thirty-nine thousand eight hundred and eighty-nine (39,889) males died during the year, as compared with 34,544 females; 3,211 deaths of colored persons were reported, and 131 deaths of Chinese and Japanese; 31,390 persons died in institutions; 27,839 in tenements; 12,535 in private dwellings; 852 people died in hotels; 1,898 on the streets or in rivers; 2,686 non-residents of the city died during the year. The recent high mortality from wood-alcohol poisoning is evidenced by the report of 62 deaths during the year from this cause, as compared with 9 during the previous year. The most interesting decrease in the mortality from the diseases caused directly by the abuse of alcohol is shown in the figures giving the mortality from alcoholism and cirrhosis of the liver. In 1919 there were 176 deaths reported from alcoholism (133 of which occurred during the first six months of the year, as against 43 in the last six months), and 383 deaths from cirrhosis of the liver, making a total of 559 deaths from these two causes, as compared with 687 deaths in the year 1918, and 1,228 deaths in the year 1917. There were 130,377 births reported during the year, a decrease of 9,454, as compared with the year 1918. This is one of the effects of the war, the birth rate being the lowest that we have had in the city during the past twenty years. On the other hand, the marriages increased from 56,733 in 1918 to 60,256 in 1919. The results of this increase will be undoubtedly reflected in an increased birth rate during the coming year.

The following are the deaths and death rates by boroughs for the year 1919, distributed to borough residence:



# ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

## DEATHS AND DEATH RATES BY BOROUGH, YEAR 1919. DISTRIBUTED TO BOROUGH RESIDENCE.

	Manhattan.	Bronx.	Brooklyn.	Queens.	Richmond.	City.
Deaths.....	33,304	8,258	25,809	5,339	1,723	74,433
Rate.....	11.98	12.79	12.46	12.14	16.62	12.39

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REPORT OF BUREAU OF RECORDS YEAR 1919.

	Borough of					City of New York	
	Manhattan.	The Bronx.	Brooklyn.	Queens.	Richmond.		
Number of deaths.....	33,937	8,616	24,512	5,253	2,115	74,433	
Death rate.....	12.20	13.34	11.84	12.93	20.40	12.39	
Corrected death rate.....	11.98	12.79	12.46	13.14	16.62	.....	

	Borough of										City of New York	
	Certificates Received and Tabulated.			Rate Per 1,000 Population.				Transit and Disinfectment Permits Issued.		Medical Examiners Cases.	Searches Made.	Transcripts Issued.
	Marriages.	Births.	Deaths.	Still-births.	Marriages.	Births.	Deaths.	Still-births.				
Manhattan.....	34,001	56,546	33,937	2,613	12.55	20.34	12.20	.94	1,534	5,113	77,347	44,327
The Bronx.....	5,438	14,788	8,616	654	8.42	22.90	13.34	1.01	620	871	13,104	9,552
Brooklyn.....	16,660	47,326	24,512	2,246	7.95	22.95	11.84	1.08	1,487	2,934	76,611	32,000
Queens.....	2,459	5,966	3,253	372	6.55	22.07	12.93	.92	2,278	635	1,004	6,229
Richmond.....	798	2,551	2,115	99	7.70	24.61	20.40	.95	129	262	3,652	1,753
City of New York.....	60,256	130,377	74,433	5,984	10.63	21.71	12.39	1.00	6,048	9,815	180,718	94,761

	Borough of					City of New York	
	Manhattan.	The Bronx.	Brooklyn.	Queens.	Richmond.		
Number of deaths in institutions.....	16,854	3,945	7,894	1,481	1,138	31,312	
Number of deaths in tenements.....	14,377	2,938	9,479	981	62	27,837	
Number of deaths in dwellings.....	1,066	1,594	6,472	2,597	805	12,534	
Number of deaths in hotels.....	637	8	138	26	23	852	
Number of deaths in streets, rivers, etc.....	983	131	529	168	87	1,898	

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CITY OF NEW YORK  
BIRTHS REPORTED FOR YEAR 1919

Month Ending	Total.	White.		Negro.		Chinese.		Jap- anese.		Native Parents.		Foreign Parents.		Mixed Parentage.		Unknown Parentage.		For- eign Moth- ers.	At- tended by Phys- ician.	At- tended by Others.
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
January.....	10,752	5,343	5,139	133	133	1	3	..	..	1,679	1,590	2,793	2,661	1,007	1,008	8	6	4,007	6,743	2
February.....	10,413	5,194	4,913	155	148	2	..	1	..	1,618	1,542	2,658	2,597	1,051	924	15	8	3,313	7,095	5
March.....	11,768	5,842	5,639	138	142	2	1	4	..	1,793	1,738	2,939	2,892	1,247	1,143	6	10	3,809	7,957	2
April.....	11,640	5,747	5,551	171	164	..	..	6	1	1,941	1,927	2,924	2,856	1,038	915	21	18	3,289	8,348	3
May.....	10,555	5,339	4,946	138	126	..	2	1	1	1,650	1,493	2,702	2,599	1,107	972	21	11	2,848	7,701	6
June.....	10,798	5,271	5,234	154	135	1	1	1	1	1,629	1,582	2,746	2,726	1,039	1,053	13	10	2,952	7,842	4
July.....	10,440	5,352	4,796	156	129	2	2	2	1	1,677	1,430	2,697	2,510	1,123	974	15	14	2,768	7,671	1
August.....	10,014	5,032	4,680	132	141	2	3	1	3	1,527	1,556	2,660	2,340	987	913	15	16	3,025	6,984	5
September...	10,602	5,220	5,039	159	177	1	3	1	2	1,710	1,610	2,648	2,601	1,006	991	18	18	3,178	7,424	..
October.....	11,545	5,697	5,512	164	169	..	..	1	2	1,813	1,722	2,951	2,850	1,084	1,105	13	7	4,932	6,613	2
November...	10,027	4,957	4,784	141	133	1	3	7	2	1,621	1,540	2,495	2,386	976	988	14	7	4,281	5,744	..
December...	11,823	5,709	5,741	172	194	3	3	1	..	1,911	1,857	2,751	2,847	1,206	1,218	16	17	3,474	8,348	1
Total.....	130,377	64,723	61,974	1,813	1,791	17	20	26	13	20,569	19,587	32,964	31,865	12,871	12,204	175	142	41,876	88,470	31

## BUREAU OF RECORDS

## BIRTHS BY NATIVITIES OF PARENTS.

Country.	City of New York.	
	Nativity of Both Parents.	Nativity of Mother Only. Mixed Parentage.
Austria Hungary.....	8,375	3,740
Bohemia.....	323	157
British America.....	52	226
England.....	296	856
France.....	92	260
Germany.....	1,063	875
Ireland.....	4,032	1,716
Italy.....	23,745	887
Russia and Poland.....	20,138	2,951
Scotland.....	136	310
Sweden.....	377	258
Switzerland.....	31	70
United States.....	39,689	12,336
Other Foreign.....	5,477	1,909
Unknown.....	.....	.....
Total.....	103,826	26,551

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## MARRIAGES REPORTED

Date.	Total.	White.		Black.		Chinese.		Single.		Widowed.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
January.....	6,937	6,379	6,400	556	537	2	....	6,121	6,099	725	706
February.....	3,971	3,802	3,807	168	164	1	....	3,479	3,480	440	406
March.....	4,366	4,095	4,100	271	266	....	....	3,848	3,867	467	429
April.....	3,888	3,732	3,732	155	156	....	....	3,499	3,529	361	290
May.....	3,787	3,597	3,596	190	191	....	....	3,304	3,245	433	480
June.....	6,492	6,288	6,292	202	199	2	1	5,894	5,994	542	436
July.....	6,332	6,119	6,122	212	210	1	....	5,713	5,794	545	447
August.....	2,951	2,860	2,860	91	91	....	....	2,643	2,686	280	225
September....	4,858	4,726	4,728	130	129	2	1	4,419	4,500	397	309
October.....	5,101	4,892	4,895	208	205	1	1	4,676	4,677	363	343
November....	5,179	4,972	4,974	206	204	1	1	4,691	4,753	448	360
December....	6,394	6,136	6,136	254	257	4	1	5,881	5,905	455	409
Total....	60,256	57,598	57,642	2,643	2,609	15	5	54,168	54,529	5,456	4,840



# BUREAU OF RECORDS

DURING YEAR 1919.

Divorced.		Native.		Foreign.		Religious Marriages.				Civil Marriages.	
M.	F.	M.	F.	M.	F.	Catholic.	Protes- tant.	Jewish.	Ethical Culture.	Alder- manic.	Judi- cial.
91	132	3,319	3,621	3,618	3,316	840	1,063	1,074	1	3,956	3
52	85	1,881	2,011	2,090	1,960	837	740	939	....	1,450	5
51	70	2,081	2,564	2,285	1,862	748	768	1,008	1	1,834	7
28	69	1,807	1,973	2,081	1,915	631	993	980	....	1,277	7
50	62	1,488	1,762	2,299	2,025	966	1,018	824	....	978	1
56	62	3,208	3,603	3,284	2,889	1,533	1,824	1,778	4	1,344	9
74	91	3,401	3,682	2,931	2,650	1,480	1,617	1,675	2	1,551	7
28	40	1,655	1,743	1,296	1,208	865	1,021	683	1	380	1
42	49	2,546	2,782	2,312	2,076	1,296	1,739	1,355	4	454	10
63	81	2,683	2,920	2,418	2,181	1,481	1,402	958	3	1,247	10
40	66	2,635	3,016	2,544	2,163	1,181	1,583	1,346	2	1,057	10
57	80	2,942	3,172	3,452	3,222	1,435	1,270	1,602	2	2,077	8
632	887	29,646	32,789	30,610	27,467	13,293	15,038	14,222	20	17,605	78

## ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

## DEATHS OF CHILDREN UNDER ONE YEAR OF AGE BY NATIVITIES OF BOTH PARENTS—DEATH RATES PER 1,000 BIRTHS REPORTED BY NATIVITIES OF BOTH PARENTS—1919.

	Births Reported by Nativities of Both Parents.	Deaths Under One Year by Nativities of Both Parents.	Death Rate per 1,000 Births Reported by Nativities of Both Parents.
Austria-Hungary . . . . .	8,375	553	66
Bohemia . . . . .	323	23	71
England . . . . .	296	32	108
France . . . . .	92	9	99
Germany . . . . .	1,063	101	95
Ireland . . . . .	4,032	363	90
Italy . . . . .	23,745	2,060	87
Russia-Poland . . . . .	20,138	1,255	62
Scotland . . . . .	136	19	140
Sweden . . . . .	377	23	61
United States . . . . .	39,689	3,532	89
Other foreign . . . . .	32,111	2,669	83
Mixed native and foreign . . . . .			
Unknown . . . . .			
Total . . . . .	130,377	10,639	82

BUREAU OF RECORDS

DEATHS BY SUICIDE IN CITY OF NEW YORK, 1919.

	Austria-Hungary.		Bohemia.		England.		France.		Germany.		Ireland.		Italy.		Russia.		Other Foreign.		United States.		Unknown.		Total by Sexes.		Total Both Sexes.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Cuts and stabs.....	2	1	..	..	1	..	..	..	3	1	3	..	2	1	1	1	3	1	15	2	1	..	31	7	38
Drowning.....	1	2	..	..	1	..	..	..	6	1	1	..	3	..	1	..	..	..	6	1	1	..	21	4	25
Gunshot.....	2	..	2	..	2	..	..	..	15	..	4	..	3	..	6	..	..	..	59	9	5	..	103	13	116
Hanging.....	8	7	..	..	2	..	..	..	8	2	2	..	..	1	4	2	7	3	27	4	6	..	62	13	75
Leaps.....	6	1	..	..	2	..	..	..	4	..	..	..	4	1	16	13	6	4	19	9	3	1	65	41	106
Railroads.....	1	..	..	..	..	..	..	..	1	..	..	..	1	1	..	..	2	1	3	..	..	..	8	3	11
Fires.....	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	1	3	4
Bichloride of mercury.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	1	..	1	1	7	..	..	3	8	11
Carbolic acid.....	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	1	3	..	..	6	6	8
Cyanide of potassium.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	2
Opium.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Other acids.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Other poisons.....	3	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	6	..	..	6	8	14
Other methods.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
Illuminating gas.....	14	12	2	1	10	3	1	2	36	21	5	3	3	4	17	9	20	11	68	40	7	1	183	107	290
Total by sexes.....	37	24	4	1	18	6	2	3	73	29	17	8	18	10	50	27	45	23	200	82	23	3	487	216	703
Total both sexes....	61		5		24		5		102		25		28		77		68		282		26		703		.....

The 703 suicides occurred in the Boroughs as follows: Manhattan, 349; The Bronx, 75; Brooklyn, 204; Queens, 65; Richmond, 10.

# ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

## DEATHS FROM ALL CAUSES ACCORDING TO NATIVITY OF DECEASED AND PARENTS OF DECEASED, NEW YORK CITY, YEAR 1919.

Country.	Nativity of Deceased.	Nativity of Parents of Deceased.
United States.....	43,493	16,471
Ireland.....	6,160	11,403
Germany.....	5,410	8,342
Italy.....	4,196	8,604
Russia.....	5,011	7,447
England.....	1,378	1,485
Austria-Hungary.....	2,840	4,132
Scotland.....	497	643
British America.....	463	338
Switzerland.....	229	243
France.....	374	437
Bohemia.....	263	399
Roumania.....	349	427
Poland.....	442	807
Syria.....	70	82
Sweden.....	572	708
Norway.....	403	559
Denmark.....	134	144
Finland.....	156	196
Holland.....	105	134
Cuba.....	81	84
Other West Indies.....	478	750
Belgium.....	36	32
Spain.....	162	223
Greece.....	241	341
China.....	123	119
Australia.....	10	8
Other foreign.....	405	470
Unknown.....	352	2,623
Mixed nationalities.....	.....	6,782
Total.....	74,433	74,433

## BUREAU OF RECORDS

## DEATHS OF NON-RESIDENTS FROM CERTAIN CAUSES, 1919.

Cause of Death.	New York City.
Typhoid fever.....	15
Pulmonary tuberculosis.....	308
Other tuberculous diseases.....	39
Cancer.....	267
Alcoholism.....	12
Heart diseases.....	242
Acute respiratory diseases.....	441
Diarrhoeal diseases.....	52
Appendicitis.....	45
Cirrhosis of liver.....	11
Diseases of women.....	27
Congenital debility.....	89
Accidents.....	151
Suicides.....	42
Other causes.....	945
Total.....	2,686
Under 1 year.....	189
1 to 4 years.....	83
5 to 14 years.....	51
15 to 24 years.....	504
25 to 44 years.....	958
45 to 64 years.....	606
65 years and over.....	295
Total.....	2,686
Institutions.....	2,049
Hotels.....	101
Other places.....	536
Total.....	2,686



## ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

DEATHS FROM ALL CAUSES AND DIARRHOEAL DISEASES UNDER ONE YEAR  
OF AGE BY WEEKS—1919.

Week Ending.	All Causes.							Diarrhoeal Diseases.						
	Under 1 Month.	1 Month and Under 2 Months.	2 Months and Under 3 Months.	3 Months and Under 6 Months.	6 Months and Under 9 Months.	9 Months and Under 12 Months.	Total Under 1 Year.	Under 1 Month.	1 Month and Under 2 Months.	2 Months and Under 3 Months.	3 Months and Under 6 Months.	6 Months and Under 9 Months.	9 Months and Under 12 Months.	Total Under 1 Year.
January 4. ....	124	21	24	29	23	22	243	7	1	5	10	5	2	30
January 11. ....	103	14	18	44	17	25	221	5	2	4	6	2	3	19
January 18. ....	124	18	26	57	27	25	277	7	1	4	16	3	3	34
January 25. ....	112	21	16	41	33	34	257	3	3	3	4	1	3	17
February 1. ....	129	26	15	46	35	34	285	2	3	4	6	2	1	18
February 8. ....	102	19	11	65	35	21	253	1	6	2	16	5	3	32
February 15. ....	125	25	18	54	32	28	282	1	1	3	7	4	2	18
February 22. ....	122	22	21	58	31	36	290	5	4	6	19	3	1	38
March 1. ....	113	21	10	41	35	34	254	3	1	2	10	5	2	23
March 8. ....	118	22	11	50	24	35	260	3	2	1	4	4	2	16
March 15. ....	112	28	12	59	43	34	288	2	3	3	17	6	3	33
March 22. ....	106	22	15	26	38	30	237	2	2	3	5	6	1	19
March 29. ....	92	14	27	29	38	25	225	3	5	6	7	4	2	29
April 5. ....	97	19	20	42	35	31	244	3	4	2	7	1	4	21
April 12. ....	87	17	21	28	33	39	225	1	1	4	7	4	6	23
April 19. ....	98	16	16	33	39	27	229	1	1	4	4	5	2	17
April 26. ....	103	14	15	28	29	25	214	2	2	2	5	4	2	17
May 3. ....	84	15	12	36	31	14	192	1	3	2	5	4	2	17
May 10. ....	91	20	16	17	39	22	205	3	4	2	3	5	3	17
May 17. ....	88	20	11	23	20	25	187	4	9	5	4	3	3	28
May 24. ....	76	13	11	33	17	26	176	2	2	4	9	5	6	28
May 31. ....	75	12	7	26	16	26	162	1	4	1	6	1	4	17
June 7. ....	86	19	13	23	21	20	182	4	3	1	3	8	3	22
June 14. ....	59	9	15	19	22	16	140	1	3	3	9	5	5	25
June 21. ....	72	11	6	25	14	16	144	1	2	3	8	4	7	25
June 28. ....	70	11	9	29	21	10	150	2	4	3	14	11	6	40
July 5. ....	52	9	11	27	16	13	128	2	2	4	13	5	4	28
July 12. ....	82	8	13	47	36	23	209	5	3	5	30	26	8	77
July 19. ....	62	8	13	36	21	28	168	1	2	9	25	10	18	65
July 26. ....	62	15	11	44	35	27	194	2	6	6	28	21	19	82
August 2. ....	63	19	24	65	63	37	271	8	13	48	46	25	140	
August 9. ....	50	11	17	49	56	34	217	4	5	7	36	43	23	118
August 16. ....	61	12	20	46	43	25	207	2	4	7	28	32	18	91
August 23. ....	79	12	14	52	43	29	229	6	4	8	35	30	24	107
August 30. ....	65	14	25	55	39	26	224	2	4	13	33	28	20	100
September 6. ....	82	11	10	60	40	25	228	3	4	6	34	29	16	92
September 13. ....	83	10	14	43	34	21	205	2	3	5	27	18	10	65
September 20. ....	81	17	13	30	20	15	176	6	7	8	14	9	6	50
September 27. ....	93	20	15	29	22	20	199	5	5	7	13	10	11	51
October 4. ....	75	15	13	48	27	17	195	1	8	3	24	13	8	57
October 11. ....	73	11	10	34	19	14	161	5	3	4	14	8	4	38
October 18. ....	79	19	13	28	10	19	168	3	5	9	8	3	6	34
October 25. ....	77	11	18	35	19	12	172	3	8	9	11	3	3	34
November 1. ....	80	12	9	24	23	16	164	3	5	6	8	6	2	30
November 8. ....	81	15	17	20	12	10	155	3	4	8	8	4	3	30
November 15. ....	60	8	8	27	10	13	126	2	1	12	4	1	20	
November 22. ....	70	14	11	20	16	8	139	3	2	5	7	5	2	24
November 29. ....	87	15	10	24	15	8	159	6	2	3	5	3	1	20
December 6. ....	92	14	11	21	15	13	166	4	2	2	8	4	3	23
December 13. ....	94	17	15	29	25	16	196	3	3	5	8	5	4	28
December 20. ....	91	16	16	22	11	12	168	4	3	5	4	1	1	18
December 27. ....	93	22	11	24	24	18	192	4	4	3	6	5	3	25
Total 52 weeks	4,535	824	758	1,900	1,442	1,179	10,638	150	173	244	696	489	318	2,070

## BUREAU OF RECORDS

## DEATHS FROM ACCIDENTS AND NEGLIGENCE—YEARS 1919-1918.

BOROUGH OF												
MANHATTAN.			THE BRONX.		BROOKLYN.		QUEENS.		RICHMOND.		CITY OF NEW YORK.	
1919.	1918.		1919.	1918.	1919.	1918.	1919.	1918.	1919.	1918.	1919.	1918.
Fractures and Contusions:												
Crushed by elevator.....												
40	41	....	....	6	2	8	2	....	1	2	45	51
15	13	1	1	1	10	11	1	1	2	3	26	37
13	6	1	1	1	8	8	2	1	2	1	28	17
13	19	7	5	4	32	19	4	4	2	2	58	49
7	18	3	4	4	7	3	3	4	5	2	25	31
Crushed by—not specified.....												
Falls:												
Down shafts, holds of vessel.....												
41	81	2	3	3	40	53	3	2	5	....	91	139
63	63	11	8	8	38	51	9	10	....	4	121	136
44	55	3	10	16	16	25	1	....	....	....	64	90
35	37	7	3	13	13	9	....	2	....	....	55	51
17	11	1	....	....	13	11	3	1	....	....	34	23
92	84	18	19	18	18	40	1	8	....	....	129	151
16	17	2	4	12	12	15	9	3	2	1	41	40
13	42	1	9	18	18	26	2	5	2	1	36	83
115	102	13	17	49	49	66	18	16	10	8	205	209
Other falls.....												
Street Vehicles:												
Wagons and trucks.....												
51	66	9	12	23	33	33	2	6	3	1	88	118
380	372	60	65	260	182	48	48	49	19	9	767	677
5	9	....	1	4	9	....	....	3	....	....	9	23
Other vehicles.....												
Railroads:												
Electric surface cars.....												
37	61	9	11	46	47	8	8	4	....	3	100	126
21	21	8	16	7	10	15	15	36	5	8	56	91
6	4	7	3	5	96	3	3	1	....	....	21	104
22	19	2	4	12	8	....	....	....	....	....	36	31
Subways.....												
Burns and Scalds:												
By stoves.....												
34	55	6	17	36	47	47	9	15	2	2	87	136
8	1	....	1	6	6	....	....	2	....	....	14	10
....	11	....	2	1	1	....	....	....	....	....	14	14
86	66	17	11	48	54	....	11	7	1	3	168	141
28	27	6	6	18	25	....	2	3	3	....	57	61
21	....	7	....	22	....	....	6	....	1	....	57	....
24	52	....	13	14	39	....	4	15	....	6	42	125
13	47	....	....	11	20	....	4	5	....	2	30	74
Conflagration.....												

## ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

## DEATHS FROM ACCIDENTS AND NEGLIGENCE—YEARS 1919-1918—Continued.

	BOROUGH OF										CITY OF NEW YORK.	
	MANHATTAN.		THE BRONX.		BROOKLYN.		QUEENS.		RICHMOND.		1919.	
	1919.	1918.	1919.	1918.	1919.	1918.	1919.	1918.	1919.	1918.		
Wounds:												
By firearms.....	8	8	8	2	7	9	4	2	3	3	27	24
By cutting and piercing instruments.....	6	6	1	1	5	3	1	..	1	1	14	11
Drowning.....	160	156	30	27	137	157	49	33	44	40	420	413
Poison:												
By food.....	3	6	4	3	2	6	1	2	..	..	10	17
By alcohol.....	..	1	..	..	1	..	..	..	..	..	1	1
By bichloride of mercury.....	2	2	..	1	1	3	1	..	..	..	4	6
By carbolic acid.....	2	..	1	1	..	1	..	..	..	..	3	2
By cocaine.....	..	..	..	..	..	..	..	..	..	..	..	1
By lysol.....	2	..	..	..	1	..	..	..	..	..	..	..
By opium and morphine.....	6	3	1	2	5	9	..	1	..	..	3	15
By wood alcohol.....	29	3	2	..	4	1	2	..	1	1	38	4
Other poisonings.....	16	13	1	2	4	6	3	5	..	2	25	28
Illuminating gas.....	234	254	12	33	156	204	8	27	10	7	420	525
Chloroform or ether.....	7	5	2	1	3	4	..	..	..	1	10	11
Coal gas.....	7	16	2	1	3	2	3	..	..	..	14	19
Ammonia fumes.....	3	..	1	1	..	..	..	..	..	..	4	..
Sewer gas.....	..	..	..	..	1	..	..	..	..	..	..	..
Other gases.....	18	16	6	8	13	21	3	3	7	..	47	48
Explosions.....	1	10	..	..	8	8	3	1	..	3	11	22
Freezing.....	1	13	..	3	2	15	1	3	1	..	34	3
Lightning.....	..	..	..	..	..	..	..	..	..	..	..	..
Electric current.....	5	2	4	11	6	4	3	1	2	1	..	3
Foreign body in larynx.....	..	..	2	..	3	8	..	..	..	..	20	19
Sunstroke.....	16	7	2	..	3	3	1	1	1	..	22	16
Stroke.....	11	34	5	7	18	40	1	4	..	1	35	86
Criminal abortion.....	30	16	4	1	9	11	7	2	..	..	50	30
Animal injury by (not snake bite or hydrophobia).....	4	6	2	3	4	4	..	..	..	..	10	13
Other violence.....	74	50	2	8	38	40	..	2	12	7	128	107
Tetanus.....	7	10	2	6	4	4	4	1	..	1	18	22
Hydrophobia.....	..	..	..	..	4	..	1	..	..	..	5	..
Total.....	1,912	2,037	294	372	1,226	1,484	265	293	152	126	3,849	4,312

BUREAU OF RECORDS

MORTALITY FROM THE PRINCIPAL CAUSES,  
WITH AGES OF DECEDENTS, BIRTHS, MARRIAGES AND STILLBIRTHS FOR YEAR 1919, CITY OF NEW YORK.

	Births.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
Births.....	10,752	11,708	11,640	10,555	10,798	10,440	10,014	10,602	11,545	10,027	11,823	130,377
Marrriages.....	6,969	4,306	3,888	3,787	6,492	6,352	2,951	4,898	5,101	5,179	6,394	60,256
Stillbirths.....	609	518	482	481	472	519	438	445	523	476	512	5,984
Total, all causes.....												
1. Typhoid fever.....	10	7	6	8	6	11	12	16	17	11	12	121
2. Typhus fever.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1
3. Malarial fevers.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8
4. Smallpox.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5. Measles.....	7	12	19	34	17	16	.....	.....	.....	.....	.....	.....
6. Scarlet fever.....	17	26	19	17	15	8	.....	.....	.....	.....	.....	.....
7. Whooping cough.....	9	9	14	8	7	20	18	16	3	10	8	136
8. Diphtheria and croup.....	134	168	141	142	93	55	38	42	14	81	27	161
9. Influenza.....	1,967	1,311	877	148	38	14	10	24	53	28	131	1,239
10. Polio-myelitis.....	.....	1	327	1	2	.....	.....	.....	.....	.....	.....	4,834
11. Cholera nostras.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	15
12. Other epidemic diseases.....	20	27	37	42	.....	15	14	.....	.....	.....	.....	.....
13. Tuberculous pulmonary.....	820	833	716	680	608	564	529	474	474	447	496	7,305
14. Tuberculous meningitis.....	60	52	62	62	44	60	48	48	42	29	24	581
15. Other forms of tuberculosis.....	23	45	62	51	46	44	58	37	38	32	37	522
16. Cancer, malignant tumors.....	457	396	437	451	412	423	409	429	428	455	484	5,147
17. Meningitis, simple.....	37	36	44	46	27	26	28	15	19	19	23	353
(of which)												
17a. Cerebro-spinal meningitis.....	19	17	16	22	16	15	16	10	10	7	10	171
18. Apoplexy and softening of brain.....	105	86	80	77	52	52	50	55	71	62	65	825
19. Organic heart disease.....	1,137	994	1,043	907	761	684	670	671	712	828	973	10,435
20. Acute bronchitis.....	104	76	81	38	20	20	14	21	19	38	46	547
21. Chronic bronchitis.....	18	14	14	13	6	8	6	9	8	13	16	143
22. Pneumonia (excluding broncho-pneumonia).....	1,557	1,209	967	401	188	166	129	102	184	238	400	6,194
22a. Broncho-pneumonia.....	1,005	851	653	325	163	144	144	146	167	208	293	4,783
23. Other respiratory diseases.....	63	56	56	50	30	26	24	25	22	28	42	497
24. Diseases of stomach (cancer excepted).....	32	29	32	32	29	22	17	23	33	29	35	354

## ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

## MORTALITY FROM THE PRINCIPAL CAUSES—Continued.

Cause of Death.		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
25.	Diarrhoeal diseases (under 5 years).....	119	134	121	102	119	141	80	549	329	213	131	112	2,474
26.	Appendicitis and typhilitis.....	48	48	60	56	63	62	49	49	46	46	42	48	680
27.	Hernia and intestinal obstruction.....	64	58	47	53	44	48	57	42	39	50	47	33	383
28.	Cirrhosis of the liver.....	32	27	32	30	31	35	24	33	39	32	35	33	383
29.	Bright's disease and acute nephritis.....	512	487	467	510	407	345	403	333	283	334	440	466	5,007
30.	Diseases of women (not cancerous).....	27	20	34	38	34	34	24	18	17	17	29	23	315
31.	Puerperal septicaemia.....	9	11	14	24	15	12	11	13	13	14	14	8	153
32.	Other puerperal diseases.....	41	41	52	50	38	53	38	37	30	31	43	37	491
33.	Congenital debility and malformations.....	424	361	367	314	287	275	282	310	337	295	257	335	3,841
34.	Old age.....	33	37	35	22	21	16	14	10	16	33	29	19	281
35.	Violent deaths (suicide excepted).....	401	298	342	348	353	357	427	331	322	280	296	350	4,103
	a. Sunstroke.....	365	274	321	327	326	331	28	2	296	266	281	336	35
	b. Other accidents.....	36	24	21	21	27	21	371	297	26	14	15	14	3,791
	c. Homicides.....							28	32					279
36.	Suicides.....	57	57	56	62	73	66	61	64	52	53	48	54	703
37.	Other causes.....	1,000	962	1,015	993	932	818	819	671	732	811	847	935	10,535
38.	Causes not known or ill-defined.....	8	6	6	5	8	6	4	9	5	5	8	8	78
Under 1 year.....		1,144	1,078	1,099	930	831	645	873	978	866	752	623	800	10,639
1 year, under 2 years.....		317	312	313	245	207	159	154	147	139	116	137	207	2,453
Total, under 5 years.....		1,832	1,728	1,742	1,458	1,274	988	1,203	1,279	1,132	999	900	1,209	15,744
65 years and over.....		1,614	1,458	1,501	1,402	1,202	959	952	893	893	1,002	1,199	1,343	14,418
70 years and over.....		1,094	1,023	1,006	958	837	677	655	616	599	686	832	909	9,892
Males.....														
Females.....		5,485	4,494	4,476	3,675	3,220	2,715	2,753	2,585	2,420	2,527	2,321	3,012	39,883
Colored.....		4,906	4,128	3,827	3,248	2,740	2,146	2,299	2,103	2,037	2,087	2,336	2,693	34,550
Chinese.....		367	372	323	328	280	262	219	214	206	177	230	235	3,213
Institutes.....		21	15	13	12	14	14	7	5	8	9	7	6	131
Tenements.....		4,098	3,492	3,418	2,884	2,615	2,286	2,270	2,129	1,942	1,948	1,978	2,252	31,312
Dwellings.....		4,211	3,445	3,219	2,561	2,161	1,596	1,766	1,623	1,580	1,668	1,775	2,232	27,837
Hotels.....		1,798	1,436	1,407	1,224	953	739	798	741	740	806	913	979	12,534
Others.....		109	102	100	90	57	46	48	43	45	49	61	102	852
Non-residents.....		175	147	159	164	174	194	170	152	150	143	130	140	1,898
Total.....		497	318	362	291	234	190	144	115	106	122	155	152	2,686



## BUREAU OF RECORDS

REGISTERED MORTALITY FROM ALL CAUSES AND CERTAIN INFECTIOUS  
DISEASES, BY WARDS, YEAR 1919.  
BOROUGH OF MANHATTAN.

Wards.	Area in Acres.	Population U. S. Census 1910.	Number of Persons to the Acre.	Typhoid Fever.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria and Croup.	Pulmonary Tuberculosis.	Lobar Pneumonia	Broncho- Pneumonia.	Diarrhoeal Diseases.	All Causes.	Deaths of Children Under 5 Years.
1	154.0	9,750	63.0	1	1	1	1	9	80	36	39	14	431	64
2	81.0	933	11.5	1	1	1	1	1	4	1	1	2	32	3
3	95.0	1,915	20.2	1	1	1	1	1	2	1	1	1	32	4
4	83.0	21,336	257.1	2	4	4	6	62	39	25	23	385	116	
5	168.0	5,666	33.7	1	1	1	1	9	4	1	3	62	12	
6	86.0	19,670	228.7	3	3	3	2	57	40	30	14	362	78	
7	198.0	102,101	515.6	3	13	13	30	61	63	90	49	918	307	
8	183.0	33,182	181.4	5	5	5	3	51	35	30	26	427	127	
9	322.0	64,909	201.6	4	4	4	30	149	95	82	52	1,081	238	
10	110.0	66,439	604.0	2	2	2	11	52	37	41	16	562	171	
11	196.0	136,548	696.7	3	6	6	27	68	72	86	47	922	295	
12	6,154.0	806,648	131.1	22	23	19	159	1,209	1,116	795	324	12,458	2,472	
13	107.0	64,651	604.3	1	3	3	9	31	29	39	21	463	134	
14	96.0	38,321	399.3	2	2	2	9	70	67	54	44	541	193	
15	198.0	30,584	154.5	1	1	1	2	52	21	26	9	353	59	
16	349.0	55,926	160.2	2	3	3	12	125	74	59	36	1,018	174	
17	331.0	172,334	520.6	1	24	9	32	188	150	154	93	1,867	534	
18	450.0	62,821	139.6	3	5	5	24	213	97	87	55	1,385	313	
19	1,481.0	292,950	197.7	6	10	7	80	430	247	264	159	4,080	846	
20	444.0	73,308	165.1	2	11	2	13	157	90	84	54	1,202	267	
21	411.0	62,345	151.7	1	2	2	13	129	83	70	32	1,135	224	
22	1,529.0	209,154	136.8	6	24	7	49	398	258	211	131	3,588	680	
Total . . . .	13,226.0	2,331,491	176.3	51	143	59	520	3,597	2,654	2,268	1,205	33,304	7,311	

## BOROUGH OF THE BRONX.

23	4,267.0	268,880	63.0	5	7	12	94	524	356	272	125	4,227	880
24	22,255.8	162,062	7.3	6	2	10	79	396	355	297	84	4,031	751
Total . . . .	26,522.8	430,942	16.2	11	9	22	173	920	711	569	209	8,258	1,631

## ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

## BOROUGH OF BROOKLYN.

Wards.	Area in Acres.	Population U. S. Census 1910.	Number of Persons to the Acre.	Typhoid Fever.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria and Croup.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Broncho- Pneumonia.	Diarrhoeal Diseases.	All Causes.	Deaths of Children Under 5 Years.
1	233.0	21,851	93.8	1	1	..	..	1	45	39	13	22	417	74
2	97.7	6,894	70.6	1	1	..	..	3	23	7	7	7	115	29
3	161.4	15,910	98.6	1	1	13	..	8	30	22	19	6	287	60
4	111.3	10,477	94.1	1	1	..	..	1	42	19	15	9	198	31
5	119.4	19,401	162.5	..	..	1	..	1	20	34	22	13	219	69
6	302.9	46,437	153.3	4	..	2	3	15	82	73	87	52	848	230
7	458.5	44,037	96.0	3	..	..	4	4	62	71	43	35	756	147
8	1,843.2	82,687	44.9	..	..	1	..	8	98	37	39	39	626	152
9	623.6	50,501	81.0	1	..	2	..	14	79	83	58	31	901	182
10	318.7	41,238	129.4	1	..	..	2	10	59	45	31	46	548	147
11	252.6	21,659	85.7	..	..	3	..	4	50	70	63	24	591	105
12	663.1	29,262	44.1	..	..	1	2	31	104	66	59	49	974	211
13	230.3	30,091	130.7	..	..	..	..	7	42	24	24	14	384	96
14	282.6	33,329	117.9	1	..	..	1	8	38	38	29	30	336	131
15	244.8	35,887	146.6	2	..	..	..	16	38	38	38	29	432	149
16	244.8	68,244	278.7	2	..	..	..	10	64	57	43	26	662	177
17	823.3	70,346	85.5	2	..	1	4	16	117	94	49	82	1,085	282
18	873.0	35,708	40.9	1	..	3	1	21	59	62	33	41	614	150
19	413.8	44,860	108.4	..	..	..	..	11	65	55	35	11	654	108
20	461.4	27,463	59.5	1	..	..	..	5	51	56	29	19	557	98
21	483.2	78,741	163.0	2	..	4	..	16	71	86	44	34	836	211
22	1,361.6	81,283	59.7	5	..	3	..	17	112	134	65	48	1,447	237
23	736.0	65,561	89.1	..	..	2	6	114	92	57	33	27	1,253	169
24	1,198.5	80,466	67.2	2	..	4	18	91	97	80	27	33	1,160	225
25	567.8	63,597	112.0	1	..	3	..	9	78	51	51	20	843	140
26	3,590.2	177,963	49.5	1	..	5	7	55	146	206	172	68	2,273	621
27	400.7	76,000	189.6	1	..	..	..	9	56	52	50	25	630	157
28	884.4	77,451	87.6	1	..	4	2	17	142	128	87	31	1,584	187
29	3,800.0	72,351	19.0	3	..	3	2	18	79	108	57	29	1,308	212
30	5,401.1	76,406	14.1	5	..	1	7	57	162	236	158	74	2,652	557
31	6,312.3	30,988	4.9	..	..	..	1	6	24	42	26	13	478	93
32	5,479.5	17,419	3.2	..	..	1	1	1	9	3	10	3	91	16
Total . . . .	38,977.8	1,634,508	41.9	43	..	51	43	423	2,252	2,225	1,593	990	25,809	5,453

## BOROUGH OF QUEENS.

1	4,650.0	61,763	13.3	3	..	5	6	30	81	103	75	57	1,120	283
2	14,700.0	105,219	7.2	1	..	1	3	17	136	133	85	54	1,570	298
3	22,000.0	37,171	1.7	3	..	..	3	21	49	50	44	19	774	142
4	36,600.0	67,412	1.8	3	..	2	..	29	202	113	66	53	1,553	262
5	3,770.0	12,476	3.3	..	..	..	..	2	6	33	9	9	322	50
Total . . . .	81,720.0	284,041	3.5	10	..	8	12	99	474	432	279	192	5,339	1,035

## BOROUGH OF RICHMOND.

1	3,340.0	27,201	8.1	..	..	3	..	5	52	54	21	15	505	93
2	4,130.0	16,871	4.1	4	..	..	..	8	39	44	19	20	388	65
3	10,050.0	19,812	2.0	..	..	3	..	6	33	40	15	14	399	77
4	8,180.0	10,662	1.3	..	..	1	..	4	22	17	13	11	272	47
5	10,900.0	11,423	1.0	2	..	..	..	1	6	17	6	9	159	32
Total . . . .	36,600.0	85,969	2.3	6	..	7	..	24	152	172	74	69	1,723	314

VITAL STATISTICS—CITY OF NEW YORK.  
DEATHS AND ANNUAL DEATH RATE PER 1,000; DEATHS ACCORDING TO CERTAIN CAUSES AND AGES; DEATHS AND DEATH RATE  
UNDER ONE YEAR PER 1,000 BIRTHS.  
YEAR 1919.

	Jan. 4	Jan. 11	Jan. 18	Jan. 25	Feb. 1	Feb. 8	Feb. 15	Feb. 22	Mar. 1	Mar. 8	Mar. 15	Mar. 22	Mar. 29	Apr. 5	Apr. 12	Apr. 19	Apr. 26	May 3	May 10	May 17	May 24	May 31	June 7	June 14	June 21	June 28
Total deaths.....	1,978	2,092	2,434	2,577	2,448	2,209	2,090	2,129	2,137	2,084	1,954	1,815	1,751	1,774	1,611	1,641	1,489	1,456	1,400	1,354	1,258	1,302	1,304	1,131	1,048	1,115
Annual death rate....	17.20	18.17	21.14	22.38	21.26	19.19	18.15	18.49	18.74	18.10	16.97	15.77	15.21	15.41	13.99	14.25	12.93	12.66	12.16	11.76	10.93	11.32	11.33	9.82	9.10	9.68
*Acute infectious diseases.....																										
Pulmonary tuberculosis.....	354	386	468	590	587	445	350	319	382	310	302	217	211	150	125	145	103	91	91	88	87	67	60	41	42	44
Lobar pneumonia.....	159	161	207	198	184	194	177	198	187	200	198	172	177	196	165	172	150	171	160	144	139	156	144	160	143	129
Broncho pneumonia.....	275	320	301	388	360	290	295	314	303	237	225	189	201	201	184	151	112	105	122	98	81	59	67	53	33	31
**Violent deaths.....	171	192	211	263	237	211	191	207	236	235	200	191	153	168	108	111	101	80	80	73	64	69	55	37	32	34
Deaths under 1 year.....	89	103	87	94	69	67	76	62	89	81	70	82	78	81	79	87	71	74	80	61	75	106	107	70	81	72
Rates per 1,000 births.....	243	221	277	257	285	253	282	290	254	260	288	237	225	244	225	229	214	192	205	187	176	162	182	140	144	150
Deaths under 5 years.....	92	84	105	88	98	94	108	111	97	100	111	91	87	94	87	89	83	74	79	78	68	63	70	54	56	58
Deaths 5 to 65 years.....	368	348	434	437	337	429	435	449	435	420	450	374	356	379	342	359	319	279	295	300	275	264	297	205	212	227
Deaths 65 years and over.....	1,305	1,405	1,610	1,733	1,619	1,401	1,310	1,327	1,353	1,305	1,158	1,082	1,080	1,060	965	941	865	864	815	806	718	765	746	698	632	677
over.....	305	339	390	387	372	379	357	353	369	359	346	359	315	335	304	341	305	313	290	248	265	273	261	228	204	211

\*Acute Infectious Diseases include typhoid fever, scarlet fever, measles, diphtheria, whooping cough, smallpox and cerebro-spinal meningitis.  
\*\*Does not include suicides.

## DEATHS AND ANNUAL DEATH RATE PER 1,000—Continued.

	July 5	July 12	July 19	July 26	Aug. 2	Aug. 9	Aug. 16	Aug. 23	Aug. 30	Sept. 6	Sept. 13	Sept. 20	Sept. 27	Oct. 4	Oct. 11	Oct. 18	Oct. 25	Nov. 1	Nov. 8	Nov. 15	Nov. 22	Nov. 29	Dec. 6	Dec. 13	Dec. 20	Dec. 27
Total deaths.....	1,090	1,267	1,055	1,021	1,198	1,091	1,056	1,026	1,070	1,036	1,070	966	1,048	1,103	1,001	1,029	1,038	1,043	1,032	1,115	1,127	1,280	1,232	1,287	1,249	1,288
Annual death rate.....	9.47	11.00	9.16	8.87	10.41	9.47	9.12	8.91	9.29	9.00	9.29	8.39	9.10	9.58	8.69	8.94	9.02	9.06	8.96	9.68	9.79	11.12	10.70	11.18	10.85	11.19
*Acute infectious diseases.....	35	35	31	21	30	34	19	21	20	26	21	25	26	37	39	31	36	36	38	39	33	43	62	61	69	59
Pulmonary tuberculosis.....	138	148	112	116	115	124	122	106	128	112	115	106	107	110	106	102	118	97	89	98	117	111	113	112	104	114
Lobar pneumonia.....	31	49	29	30	38	31	37	30	21	18	25	25	19	40	31	47	36	47	50	65	50	59	71	77	85	107
Broncho pneumonia.....	37	34	24	32	42	29	36	28	37	21	37	34	36	36	38	33	46	39	45	48	43	57	60	62	70	59
**Violent deaths.....	80	126	82	102	104	82	69	72	68	64	82	76	82	76	55	57	63	68	64	62	70	81	71	75	64	96
Deaths under 1 year.....	128	210	168	194	271	217	207	229	224	228	205	176	199	195	161	168	172	164	155	126	139	159	166	196	168	192
Rates per 1,000 births.....	50.3	82.5	66.2	76.7	106.1	85.8	82.2	91.2	89.4	91.2	82.2	70.4	80.0	78.4	64.6	67.4	69.2	66.6	63.1	41.2	56.5	64.6	67.2	79.3	67.8	77.4
Deaths under 5 years.....	507	297	225	264	351	290	278	297	281	284	295	233	262	256	216	224	236	208	215	202	192	232	255	287	257	284
Deaths 5 to 65 years.....	653	721	636	575	641	591	581	531	567	553	600	542	566	611	579	572	572	568	578	629	650	738	691	695	701	705
Deaths 65 years and over.....	230	249	194	182	206	210	197	198	222	199	195	191	220	236	206	233	230	237	239	284	285	310	286	305	291	299

VITAL STATISTICS—CITY OF NEW YORK.  
CASES OF REPORTABLE INFECTIOUS DISEASES.

	Jan. 4	Jan. 11	Jan. 18	Jan. 25	Feb. 1	Feb. 8	Feb. 15	Feb. 22	Mar. 1	Mar. 8	Mar. 15	Mar. 22	Mar. 29	Apr. 5	Apr. 12	Apr. 19	Apr. 26	May 3	May 10	May 17	May 24	May 31	June 7	June 14	June 21	June 28
Tuberculosis.....	96	238	41	361	281	369	312	292	258	329	372	504	222	243	280	400	364	166	251	215	479	252	320	437	314	179
Diphtheria.....	229	278	15	298	316	371	340	291	356	359	355	378	384	368	347	365	327	292	319	378	325	290	317	307	310	329
Measles.....	13	21	29	44	50	43	32	50	54	55	46	75	76	68	86	124	160	153	185	257	221	279	217	141	130	113
Scarlet fever.....	78	103	120	136	148	128	149	123	109	182	168	147	180	140	152	135	125	116	158	115	131	88	86	77	61	49
Chickenpox.....	53	85	117	97	94	66	123	99	157	118	130	142	178	135	180	153	198	153	167	242	168	143	207	216	181	100
Influenza.....	2,341	2,525	3,310	3,988	3,067	1,755	1,438	1,488	1,451	1,132	956	724	628	516	305	169	110	120	74	54	19	5	4	2	1	7
Pneumonia.....	619	652	844	917	981	665	526	480	504	448	414	369	329	269	219	161	114	133	115	90	64	37	19	21	15	7
Typhoid fever.....	9	15	1	7	9	7	5	2	10	5	4	4	2	1	11	9	4	4	16	10	3	10	9	6	14	10
Whooping cough.....	7	9	15	13	12	18	16	13	10	12	10	6	5	5	19	16	10	10	16	17	13	17	15	12	24	24
Syphilis.....	241	292	38	248	313	325	331	352	455	372	297	193	312	506	245	369	295	157	287	319	347	358	235	268	368	364
Gonorrhoea.....	65	55	14	16	135	10	106	66	115	212	63	95	35	103	59	76	48	68	57	30	102	196	48	31	121	82
Polomyelitis.....	...	...	...	...	...	...	...	2	...	...	...	...	2	...	...	1	1	...	...	...	...	3	...	...	...	...
Cerebro-spinal meningitis.....	2	11	8	9	5	10	6	6	7	3	4	8	12	10	14	13	6	3	12	8	11	7	7	9	4	11
Total.....	3,753	4,284	5,493	6,134	5,391	3,788	3,358	3,244	3,559	3,193	2,819	2,645	2,365	2,134	1,947	2,034	1,759	1,375	1,637	1,735	1,883	1,685	1,540	1,529	1,545	1,271

	July 5	July 12	July 19	July 26	Aug. 2	Aug. 9	Aug. 16	Aug. 23	Aug. 30	Sept. 6	Sept. 13	Sept. 20	Sept. 27	Oct. 4	Oct. 11	Oct. 18	Oct. 25	Nov. 1	Nov. 8	Nov. 15	Nov. 22	Nov. 29	Dec. 6	Dec. 13	Dec. 20	Dec. 27
Tuberculosis.....	191	188	215	211	312	245	388	168	288	165	136	238	148	247	368	373	302	322	298	365	404	168	222	297	245	172
Diphtheria.....	240	203	186	131	132	162	132	139	142	114	114	171	136	162	198	169	100	196	254	232	273	280	316	344	329	296
Measles.....	72	85	88	84	58	64	39	25	27	35	27	27	27	31	52	63	107	137	146	232	265	351	456	656	1,012	1,012
Scarlet fever.....	45	31	34	31	19	21	16	21	19	22	31	40	44	31	48	51	64	60	48	77	68	98	90	139	113	124
Chickenpox.....	39	28	61	27	7	12	17	7	12	19	16	13	14	19	24	38	45	48	42	81	75	69	136	144	172	133
Influenza.....	2	...	...	6	...	3	...	...	...	5	4	7	23	14	38	31	42	38	39	31	79	49	65	47	84	88
Pneumonia.....	...	3	14	9	...	9	14	...	...	...	1	6	24	9	29	29	47	53	93	94	134	186	151	201	281	285
Typhoid fever.....	12	29	22	10	19	20	29	32	36	55	50	51	51	44	40	53	33	33	31	25	9	22	13	15	13	118
Whooping cough.....	27	40	39	56	46	37	37	35	33	22	22	40	33	24	30	27	38	34	38	173	74	39	88	59	90	88
Syphilis.....	218	210	219	433	200	264	214	243	260	337	22	330	278	330	227	175	411	630	1,734	641	237	436	283	228	229	220
Gonorrhoea.....	137	170	38	82	14	28	77	48	148	125	119	13	6	72	8	9	118	85	250	1,202	281	59	62	59	94	75
Polomyelitis.....	1	...	...	...	...	...	2	2	4	1	2	2	2	3	2	2	...	4	1	1	3	3	1	...	...	...
Cerebro-spinal meningitis.....	6	8	9	1	3	4	5	5	3	7	2	2	4	4	2	5	1	3	5	2	5	3	3	3	7	4
Total.....	1,045	902	929	1,075	831	878	970	780	974	924	771	940	810	996	1,066	995	1,448	1,644	1,816	1,416	2,328	1,584	2,101	2,248	2,315	2,540



# ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

## MARRIAGES, BIRTHS, DEATHS

	Total.	White.		Colored.		Other.		Native Parents.		Foreign Parents.		Parentage of Mixed Nativities.		Parentage Unknown or Not Stated.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Marriages..	60,256	57,598	57,642	2,643	2,609	15	5	29,646	32,789	30,610	27,467	.....	.....	.....	....
Births.....	130,377	64,723	61,974	1,813	1,791	43	33	20,569	19,587	32,964	31,865	12,871	12,204	175	142
Deaths.....	74,433	38,083	32,970	1,645	1,568	155	12	8,602	7,869	25,774	22,783	3,578	3,204	1,929	694
Stillbirths...	*5,984	3,020	2,576	191	132	3	...	1,028	883	1,739	1,446	377	292	70	87

\*Sex undetermined, 62.

BUREAU OF RECORDS

AND STILLBIRTHS REPORTED—1919.

Single.		Married.		Widowed.		Di- vorced.		Not Stated.		Months of Utero-Gestation.										Not Stated.
										1	2	3	4	5	6	7	8	9	10	
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.											
54,168	54,529	.....	.....	5,456	4,840	632	887	.....	.....											
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....											
18,726	15,358	15,918	12,027	4,651	9,034	89	69	499	62											
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	24	125	307	513	657	755	738	2,476	244	143

# ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

## DEATHS FROM INFLUENZA, BRONCHO AND OLD CITY MANHATTAN AND BRONX—1889-1897.

Influenza.														Broncho and					
Year.	Total.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.	Jan.	Feb.	Mar.	Apr.	May.
1889	7												7	4,075	405	394	534	508	352
1890	314	260	30	16	4	1	2					1		4,989	1,111	434	487	465	412
1891	854	1		45	507	123	34	4	3			4	129	5,818	502	478	646	1,112	563
1892	495	281	109	50	20	13	3	1				13	5	5,841	648	609	685	691	711
1893	227	5	4	47	86	30	9			2	4	5	35	6,487	687	613	1,089	1,082	653
1894	188	71	33	29	16	5	6	4	1		4	6	13	4,725	680	551	525	512	425
1895	567	242	165	84	44	15	2		1		2	4	8	5,751	835	609	618	681	541
1896	101	16	18	17	26	5		1	1		2	4	11	5,383	633	619	739	803	522
1897	196	10	28	64	51	21	4	1		2	2	3	10	4,621	422	494	627	489	401
1898	393	11	26	30	26	8	2	2			1	15	272	8,094	787	789	910	830	743
1899	461	237	91	50	24	13		1		1	9	10	25	8,531	1,035	952	912	890	743
1900	612	32	112	219	143	42	16	2	1	2		5	38	10,482	1,129	1,348	1,753	1,511	961
1901	856	398	194	114	67	20	9		1	4		13	28	9,168	1,344	888	1,170	955	743
1902	157	30	37	32	15	4	1	1	2		8	9	18	9,377	1,322	1,261	1,053	945	911
1903	418	23	146	131	42	18	5	1		1	6	14	31	9,714	1,071	1,156	1,116	942	922
1904	501	70	103	128	87	29	5	1			1	22	53	12,369	1,516	1,653	1,767	1,729	1,134
1905	311	108	65	56	16	16	6	2	2	2	2	18	18	9,783	1,306	1,088	1,117	1,071	853
1906	241	40	37	43	35	19	6	3			3	12	41	10,868	1,293	1,184	1,397	1,291	1,039
1907	714	155	109	109	50	24	17	3		6	15	22	204	11,806	1,504	1,310	1,398	1,157	982
1908	403	167	94	63	33	7	4	1			3	11	20	9,508	1,219	1,123	1,152	1,116	942
1909	335	37	34	77	89	28	3		1	4	5	19	38	10,614	1,097	964	1,307	1,365	980
1910	366	47	49	75	52	24	13	5	3	1	7	14	76	10,519	1,332	1,042	1,333	1,184	878
1911	486	152	101	82	50	35	6	2	1	5	10	17	25	10,055	1,239	1,118	1,375	1,314	940
1912	269	35	45	49	37	16	6	4	3	4	11	19	40	9,979	1,118	1,134	1,216	1,051	1,062
1913	350	71	67	73	47	20	8	3	3	5	4	20	29	10,042	1,132	1,357	1,504	1,001	956
1914	336	55	52	103	54	17	6	4	3	2	8	10	22	9,678	1,051	1,100	1,496	1,051	951
1915	526	43	34	81	129	49	19	10	3	6	12	23	117	10,922	1,203	976	1,463	1,544	978
1916	853	381	180	100	47	30	13	3	5	2	10	21	61	10,568	1,725	1,115	1,196	1,028	968
1917	657	220	134	94	43	30	14	8	8	10	15	32	49	11,051	1,954	1,345	1,199	1,047	1,022
1918	12,562	72	52	133	106	36	7	6	5	114	8,384	2,731	916	20,628	1,471	1,304	2,294	1,746	856
1919	4,834	1,967	1,311	877	327	148	38	14	10	24	48	28	42	10,977	2,562	2,055	1,818	1,144	726

# BUREAU OF RECORDS

## LOBAR PNEUMONIA AND ACUTE BRONCHITIS. GREATER CITY—ALL BOROUGH—1898-1919.

Lobar Pneumonia.							Acute Bronchitis.														Year.
June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.	
229	147	161	205	270	308	562	1,814	182	217	234	159	133	107	96	104	105	120	129	228	1889	
276	205	223	196	285	362	533	1,987	391	190	229	201	163	116	94	98	96	121	136	152	1890	
352	237	208	242	296	508	674	1,836	174	127	195	333	179	120	82	82	107	124	117	196	1891	
385	301	255	254	340	464	498	1,754	221	179	206	195	185	125	106	57	107	104	132	137	1892	
359	252	223	234	287	379	629	1,577	181	135	241	229	134	80	68	76	82	93	101	157	1893	
314	230	206	224	286	333	439	1,329	175	156	128	136	97	103	62	63	71	95	107	136	1894	
311	231	268	267	366	449	575	1,636	229	195	180	167	126	86	66	70	74	118	144	181	1895	
284	257	218	298	340	324	346	1,292	142	131	179	177	125	67	58	80	72	88	76	97	1896	
303	228	236	259	358	353	451	1,089	100	124	125	109	103	77	51	54	72	86	83	105	1897	
472	404	347	420	543	684	1,165	1,923	187	207	227	188	167	99	80	81	109	155	169	254	1898	
491	436	343	428	574	703	1,024	1,988	222	226	200	177	143	123	90	81	126	181	221	198	1899	
595	433	343	367	539	659	844	1,964	230	283	311	251	152	91	66	62	71	115	156	176	1900	
533	375	361	401	571	771	1,056	1,683	225	167	216	176	128	92	53	78	90	109	137	212	1901	
527	442	399	472	550	683	812	1,898	278	243	198	183	170	86	76	81	109	129	162	183	1902	
556	480	386	424	543	919	1,199	1,560	165	191	162	149	158	84	68	71	89	102	152	169	1903	
562	429	404	442	586	894	1,253	1,735	243	201	222	194	159	106	69	56	86	101	132	166	1904	
586	443	430	396	579	859	1,055	1,417	173	141	167	170	123	86	76	75	64	85	119	138	1905	
634	444	414	504	665	854	1,149	1,319	195	162	187	142	107	66	61	56	53	84	83	123	1906	
777	528	612	501	643	923	1,471	1,048	129	139	109	98	92	65	65	56	53	57	80	105	1907	
502	380	379	443	560	715	977	819	114	82	78	100	53	45	36	33	50	51	70	107	1908	
704	500	417	480	680	885	1,235	1,051	127	92	115	112	100	46	40	48	68	80	81	142	1909	
641	485	417	485	596	762	1,364	928	125	92	96	95	57	65	45	48	60	52	84	109	1910	
552	466	397	403	567	715	969	877	98	95	96	97	77	44	40	32	37	59	87	115	1911	
662	483	429	396	649	718	1,061	732	107	78	88	86	70	38	29	24	32	50	65	65	1912	
690	498	424	425	481	698	876	693	70	83	83	63	76	48	32	39	26	43	58	72	1913	
639	444	396	380	469	689	1,012	601	62	60	82	55	48	41	29	32	26	36	53	77	1914	
821	483	424	409	547	700	1,374	711	100	69	67	78	58	45	26	27	34	41	60	106	1915	
661	545	537	431	568	690	1,104	813	111	97	97	74	76	59	45	37	31	44	46	96	1916	
648	378	380	434	636	864	1,144	789	125	104	87	58	70	52	17	26	31	51	65	103	1917	
445	354	313	470	7,187	2,669	1,519	760	118	99	99	70	61	27	22	12	28	98	64	62	1918	
351	310	273	248	351	446	693	547	104	76	81	70	38	20	20	14	21	19	38	46	1919	

CITY OF NEW YORK  
DEATHS BY SEX, AGE, AND CAUSE OF DEATH FOR 1919.

## GENERAL DISEASES.

	1 Typhoid Fever.		2 Typhus Fever.		3 Relapsing Fever.		4 Malarial Fever.		5 Smallpox.		6 Measles.		7 Scarlet Fever.		8 Whooping Cough.		9 Diphtheria and Croup.		10 Influenza.		11 Miliary Fever.	
	Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.	
Total all ages. . .	121		1		..		8		..		218		136		161		1,239		4,834		..	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Total by sexes. .	69	52	....	1	....	....	3	5	....	....	111	107	76	60	73	88	675	564	2,342	2,493	....	....
Under 1 year. . .	....	1	....	....	....	....	....	....	....	....	29	31	3	5	36	44	56	44	100	81	....	....
1 year. . .	....	....	....	....	....	....	....	....	....	....	52	53	4	6	21	20	157	109	79	69	....	....
2 years. . .	....	1	....	....	....	....	....	....	....	....	14	15	17	15	10	9	124	97	51	45	....	....
3 years. . .	....	....	....	....	....	....	....	....	....	....	8	3	12	8	2	9	88	73	29	38	....	....
4 years. . .	....	....	....	....	....	....	....	....	....	....	3	2	13	11	3	7	70	57	25	24	....	....
Under 5 y's	....	2	....	....	....	....	....	....	....	....	106	104	49	45	72	85	495	380	284	257	....	....
5 to 9 years. . .	4	4	....	....	....	....	1	....	....	....	2	....	18	9	1	3	135	140	49	70	....	....
10 to 14 years. .	5	5	....	....	....	....	....	....	....	....	....	1	3	....	....	....	22	24	27	58	....	....
15 to 19 years. .	6	12	....	....	....	....	....	....	....	....	....	1	2	....	....	....	6	4	116	109	....	....
20 to 24 years. .	13	8	....	....	....	....	....	....	....	....	....	1	2	....	....	....	5	3	212	346	....	....
25 to 29 years. .	8	7	....	....	....	....	....	....	....	....	....	....	2	....	....	....	3	3	358	532	....	....
30 to 34 years. .	13	3	....	....	....	....	....	....	....	....	....	....	1	....	....	....	4	1	357	319	....	....
35 to 39 years. .	3	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	238	152	....	....
40 to 44 years. .	7	3	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	157	126	....	....
45 to 49 years. .	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	139	105	....	....
50 to 54 years. .	4	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	129	110	....	....
55 to 59 years. .	2	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	79	75	....	....
60 to 64 years. .	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	71	72	....	....
65 to 69 years. .	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	64	67	....	....
70 to 74 years. .	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	35	51	....	....
75 to 79 years. .	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	18	23	....	....
80 to 84 years. .	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4	12	....	....
85 y's and over	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5	8	....	....
Colored. . .	....	3	....	....	....	....	....	....	....	....	2	2	1	....	5	8	12	12	62	60	....	....
Chinese. . .	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	12	1	....	....
Japanese. . .	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	1	....	....



## BUREAU OF RECORDS

## DEATHS BY SEX, AGE, AND CAUSE OF DEATH FOR 1919—Continued.

GENERAL DISEASES—Continued.													
	12	13	14	15	16	17	18	19	20	21	22		
	Asiatic Cholera.	Cholera Nostris.	Dysentery.	Plague.	Yellow Fever.	Leprosy.	Erysipelas.	Other Epidemic Diseases.	Pyæmia, Septicæmia.	Glanders.	Malignant Pustule.		
	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	
Total all ages..	..	1	37	..	..	2	206	17	75	1	9		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Total by sexes..	....	1	21	....	....	2	114	92	55	1	9	....	
Under 1 year...	....	....	3	....	....	....	54	46	6	....	....	....	
1 year.....	....	....	1	....	....	....	3	5	1	....	....	....	
2 years.....	....	....	3	....	....	....	....	2	....	....	....	....	
3 years.....	....	....	1	....	....	....	....	1	....	....	....	....	
4 years.....	....	....	....	....	....	....	....	....	....	....	....	....	
T'd under 5 yrs.	....	....	8	....	....	....	57	55	7	....	....	....	
5 to 9 years....	....	....	....	....	....	....	1	....	4	....	....	....	
10 to 14 years..	....	....	....	....	....	....	....	1	3	....	....	....	
15 to 19 years..	....	....	1	....	....	....	1	....	5	....	....	....	
20 to 24 years..	....	....	2	....	....	....	3	....	2	....	....	....	
25 to 29 years..	....	....	1	....	....	....	1	....	5	....	....	....	
30 to 34 years..	....	....	....	....	....	....	2	....	2	....	....	....	
35 to 39 years..	....	....	....	....	....	....	2	....	6	....	....	....	
40 to 44 years..	....	....	....	....	....	....	4	....	4	....	....	....	
45 to 49 years..	....	....	1	....	....	....	8	....	3	....	....	....	
50 to 54 years..	....	....	1	....	....	....	9	....	1	....	....	....	
55 to 59 years..	....	....	....	....	....	....	7	....	5	....	....	....	
60 to 64 years..	....	....	....	....	....	....	3	....	4	....	....	....	
65 to 69 years..	....	....	....	....	....	....	5	....	1	....	....	....	
70 to 74 years..	....	....	....	....	....	....	3	....	5	....	....	....	
75 to 79 years..	....	....	....	....	....	....	1	....	4	....	....	....	
80 to 84 years..	....	....	3	....	....	....	5	....	1	....	....	....	
85 yrs and over	....	....	1	....	....	....	2	....	....	....	....	....	
Colored.....	....	....	1	....	....	1	3	2	3	....	1	....	
Chinese.....	....	....	....	....	....	....	....	....	....	....	....	....	
Japanese.....	....	....	....	....	....	....	....	....	....	....	....	....	

## DEATHS BY SEX, AGE, AND CAUSE OF DEATH FOR 1919—Continued.

GENERAL DISEASES—Continued.																					
	23	24	25	26	27	28	29	30	31	32	33										
	Hydrophobia.	Tetanus Trismus.	Mycoses.	Pellagra.	Beriberi.	Tuberculosis of Lungs.	Acute Miliary Tuberculosis.	Tuberculosis Meningitis.	Abdominal Tuberculosis.	Pott's Disease.	White Swelling.										
	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.										
Total, all ages...	5	18	4	4	..	7,395	140	581	138	45	30										
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.									
Total by sexes...	2	3	6	2	4	4,718	89	51	326	255	73	65									
Under 1 year...	...	...	...	...	...	...	...	...	...	...	...	...									
1 year...	...	2	2	...	...	28	7	2	65	42	10	4									
2 years...	...	...	...	...	...	18	3	2	31	58	3	1									
3 years...	...	...	...	...	...	15	2	1	60	38	1	1									
4 years...	...	...	...	...	...	9	2	1	35	22	1	1									
T'd under 5 yrs.	...	2	2	...	...	5	1	1	37	17	1	1									
5 to 9 years...	...	...	...	...	...	11	3	1	19	14	1	1									
10 to 14 years...	...	...	...	...	...	71	15	8	166	5	2	2									
15 to 19 years...	...	2	1	...	...	21	6	3	50	33	5	9									
20 to 24 years...	...	2	...	...	...	37	1	2	14	14	3	6									
25 to 29 years...	...	...	1	1	...	179	10	13	19	14	3	3									
30 to 34 years...	...	1	...	2	...	456	7	6	8	11	5	5									
35 to 39 years...	...	2	...	...	...	533	12	7	7	8	3	2									
40 to 44 years...	...	1	...	...	...	575	8	3	8	8	2	1									
45 to 49 years...	...	2	...	...	...	631	11	4	6	4	3	2									
50 to 54 years...	...	...	1	1	...	539	6	2	10	2	2	6									
55 to 59 years...	...	1	...	...	...	549	4	1	5	3	2	7									
60 to 64 years...	...	...	...	...	...	438	3	2	3	2	...	3									
65 to 69 years...	...	1	1	...	...	151	3	1	1	1	...	3									
70 to 74 years...	...	...	...	...	...	275	2	...	...	...	...	...									
75 to 79 years...	...	1	...	...	...	213	4	...	...	...	...	...									
80 to 84 years...	...	...	...	...	...	110	1	...	...	...	...	...									
85 yrs and over	...	...	...	...	...	45	...	...	...	...	...	...									
Colored...	...	...	...	...	...	56	...	...	...	...	...	...									
Chinese...	...	...	...	...	...	26	...	...	...	...	...	...									
Japanese...	...	...	...	...	...	9	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	4	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3	...	...	...	...	...	...									
	...	...	...	...	...	3															

## DEATHS BY SEX, AGE, AND CAUSE OF DEATH FOR 1919—Continued.

GENERAL DISEASES—Continued.											
	34	35	36	37	38A	38B	39	40	41	42	43
	Tuberculosis of Other Organs.	General Tuberculosis.	Rachitis.	Syphilis.	Soft Chancre.	Gonorrhoeic Infection.	Cancers, &c., of the Mouth.	Cancer of Stomach Liver.	Cancer of Intestines Rectum.	Cancer of Female Genital Organs.	Cancer of Breast.
	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.
Total, all ages...	106	63	63	476	2	36	166	1,932	757	696	441
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	F.
Total by sexes...	62	44	38	25	37	26					
Under 1 year...	3	2	5	6	26	12					
1 year...	1	2	4	4	7	13					
2 years...	1	1	2	3	4						
3 years...	...	...	...	...	...	...					
4 years...	...	...	...	...	...	...					
5 years...	5	6	13	15	37	26					
5 to 9 years...	1	2	3	...	...	...					
10 to 14 years...	4	5	...	...	...	...					
15 to 19 years...	8	...	...	...	...	...					
20 to 24 years...	10	2	3	1	...	...					
25 to 29 years...	4	6	3	2	...	...					
30 to 34 years...	9	6	2	2	...	...					
35 to 39 years...	4	2	3	...	...	...					
40 to 44 years...	6	3	5	1	...	...					
45 to 49 years...	4	...	...	...	...	...					
50 to 54 years...	1	1	...	...	...	...					
55 to 59 years...	1	1	...	...	...	...					
60 to 64 years...	3	...	2	1	...	...					
65 to 69 years...	...	...	...	...	...	...					
70 to 74 years...	1	4	...	...	...	...					
75 to 79 years...	...	...	...	...	...	...					
80 to 84 years...	1	1	...	...	...	...					
85 y's and over	...	...	...	...	...	...					
Colored...	3	10	6	11	9	...					
Chinese...	...	...	...	...	...	...					
Japanese...	...	...	...	...	...	...					

## DEATHS BY SEX, AGE, AND CAUSE OF DEATH FOR 1919—Continued.

GENERAL DISEASES—Continued.																						
44	45	46	47	48	49	50	51	52	53	54												
Cancer of Skin.	Cancer of Other Organs.	Other Tumors (except of Female Genital Organs).	Acute Articular Rheumatism.	Chronic Rheumatism and Gout.	Scurvy.	Diabetes.	Exophthalmic Goitre.	Addison's Disease.	Leukaemia	Anaemia Chlorosis.												
Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.												
70	1,085	23	236	66	7	955	65	12	160	205												
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.											
46	24	705	380	10	13	108	128	29	37	3	4	380	575	10	55	4	8	96	64	87	118	
Under 1 year...	1	...	1	2	2	3	1	...	...	1	3	...	...	...	...	...	...	3	1	1	3	
1 year...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	2	1	2	
2 years...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
3 years...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
4 years...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
5 to 9 years...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
10 to 14 years...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
15 to 19 years...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
20 to 24 years...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
25 to 29 years...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
30 to 34 years...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
35 to 39 years...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
40 to 44 years...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
45 to 49 years...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
50 to 54 years...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
55 to 59 years...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
60 to 64 years...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
65 to 69 years...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
70 to 74 years...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
75 to 79 years...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
80 to 84 years...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
85 yrs and over.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Colored...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Chinese...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Japanese...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Total, all ages...	70	705	380	10	13	108	128	29	37	3	4	380	575	10	55	4	8	96	64	87	118	
Total by sexes...	46	24	705	380	10	13	108	128	29	37	3	4	380	575	10	55	4	8	96	64	87	118

## DEATHS BY SEX, AGE, AND CAUSE OF DEATH FOR 1919--Continued.

[illegible]



## DEATHS BY SEX, AGE, AND CAUSE OF DEATH FOR 1919—Continued.

DISEASES OF NERVOUS SYSTEM AND ORGANS OF SENSE—Continued.																					
64		65		66		67		68		69		70		71		72		73A		73B	
Apoplexy Cerebral Hemorrhage.		Softening of Brain.		Paralysis Unspecified.		General Paresis.		Other Forms of Insanity.		Epilepsy.		Convulsions (not Puerperal).		Convulsions of Infants.		Chorea.		Hysteria.		Neuralgia and Neuritis.	
Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.	
811		14		42		296		133		124		5		55		9		2		11	
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
387	424	8	6	19	23	225	71	38	95	77	47	2	3	29	26	1	8	1	1	5	6
Under 1 year...		2	3			1				1	1			22	19						
1 year...		1	1								1			4	4						
2 years...														1	3						
3 years...																					
4 years...																					
5 years...			5			1				2	3	1		28	26						
Under 5 yrs																					
5 to 9 years...		1								6	6		1	1			5				
10 to 14 years...			1					2	8	9	4						1				
15 to 19 years...						1	1	1	9	5	2		1				2				
20 to 24 years...										8	5										
25 to 29 years...		1	3		1	4	3	5	10	9	5		1								
30 to 34 years...		3	5			16	6	5	12	5	5										
35 to 39 years...		16	12	1		46	15	2	22	5	5										
40 to 44 years...		20	18			34	10	6	13	7	5										
45 to 49 years...		28	30	1		53	9	6	14	6	2	1									
50 to 54 years...		41	29			26	11	4	6	6	2										
55 to 59 years...		43	52		1	20	8	2	4	2	2										
60 to 64 years...		64	54	2		14	1	1	2	2	2										
65 to 69 years...		59	47		1	6	4	3	5	2	1										
70 to 74 years...		44	60		1	3	5	3	3	1	1										
75 to 79 years...		31	52	4	1																
80 to 84 years...		20	28		1	2	2														
85 yrs and over		12	27		1	1	1		1												
Colored.		7	20			15	5	2	7	3					2					1	
Chinese.						1															
Japanese.																					

## DEATHS BY SEX, AGE, AND CAUSE OF DEATH FOR 1919—Continued.

DISEASES OF NERVOUS SYSTEM AND ORGANS OF SENSE.										DISEASES OF CIRCULATORY SYSTEM.											
74		75A		75B		75C		76		77		78		79		80		81		82	
Other Nervous Diseases.		Follicular Conjunctivitis.		Trachoma.		Other Diseases of Eye and Appendages.		Diseases of Ear.		Pericarditis.		Acute Endocarditis.		Organic Heart Disease.		Angina Pectoris.		Diseases of Arteries Aneurism, etc.		Embolism Thrombosis.	
Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.	
214		1		..		2		289		51		320		10,435		360		2,732		95	
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
110	104	....	1	....	....	2	....	174	115	30	21	154	166	5,029	5,406	260	100	1,336	1,396	55	40
9	12	....	....	....	....	1	....	35	23	....	....	6	6	8	10	....	....	....	....	1	....
6	7	....	....	....	....	....	....	16	5	....	....	2	....	5	4	....	....	....	....	....	....
2	4	....	....	....	....	1	....	8	6	1	....	3	3	6	2	....	....	....	....	....	....
2	1	....	....	....	....	....	....	5	5	....	....	2	2	6	8	....	....	....	....	....	....
1	1	....	....	....	....	....	....	1	5	....	....	5	6	8	13	....	....	....	....	1	1
1	1	....	....	....	....	2	....	65	44	1	....	18	17	33	33	....	....	....	....	2	1
1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
5 to 9 years..	13	....	....	....	....	....	....	9	11	5	4	16	11	84	67	....	....	....	....	....	....
10 to 14 years..	2	....	....	....	....	....	....	9	7	3	1	10	17	78	102	....	....	....	....	1	....
15 to 19 years..	3	....	....	....	....	....	....	7	6	2	1	6	15	60	80	....	....	....	....	1	....
20 to 24 years..	5	....	....	....	....	....	....	12	5	2	3	12	9	69	80	1	....	....	....	1	....
25 to 29 years..	6	....	....	....	....	....	....	8	10	2	1	5	13	105	110	1	1	6	....	....	....
30 to 34 years..	11	....	....	....	....	....	....	10	10	2	2	13	16	118	127	15	3	17	....	....	....
35 to 39 years..	8	....	....	....	....	....	....	13	1	2	1	16	12	226	195	14	2	20	11	1	1
40 to 44 years..	11	....	....	....	....	....	....	13	1	2	1	6	11	241	266	18	5	37	21	3	1
45 to 49 years..	12	....	....	....	....	....	....	6	5	2	1	13	12	407	324	37	8	35	40	3	6
50 to 54 years..	13	....	....	....	....	....	....	7	6	3	1	12	16	464	487	46	9	103	95	9	3
55 to 59 years..	2	....	....	....	....	....	....	9	4	3	....	8	8	565	541	38	13	141	111	9	2
60 to 64 years..	3	....	....	....	....	....	....	8	3	....	....	8	8	632	598	36	14	203	157	9	3
65 to 69 years..	3	....	....	....	....	....	....	1	1	....	....	7	3	575	623	36	16	203	157	9	3
70 to 74 years..	1	....	....	....	....	....	....	....	....	2	....	2	4	574	680	25	19	209	222	8	2
75 to 79 years..	....	....	....	....	....	....	....	....	....	1	1	1	1	406	531	....	....	235	235	3	5
80 to 84 years..	1	....	....	....	....	....	....	....	....	....	....	....	....	8	....	8	5	166	237	6	2
85 yrs. and over	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	5	109	136	1	3
Colored.....	9	3	....	....	....	....	....	9	7	4	1	5	2	161	229	4	3	32	37	1	....
Chinese.....	1	....	....	....	....	....	....	....	....	....	....	....	....	20	....	....	....	....	....	....	....
Japanese.....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....

## DEATHS BY SEX, AGE, AND CAUSE OF DEATH FOR 1919—Continued.

DISEASES OF CIRCULATORY SYSTEM—Con.						DISEASES OF RESPIRATORY SYSTEM.															
83		84		85		86		87		88		89		90		91		92		93	
Diseases of Veins (Hæmorrhoids, Varices, Phlebitis, etc.)		Diseases of Lymphatics (Lymphangitis, etc.)		Hæmorrhage.		Diseases of Nasal Fossæ.		Diseases of Larynx.		Diseases of Thyroid Gland s.		Acute Bronchitis.		Chronic Bronchitis.		Broncho Pneumonia.		Lobar Pneumonia.		Pleurisy.	
Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.	
31		50		3		11		21		24		547		143		4,783		6,194		236	
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
17	14	28	22	2	1	6	5	10	11	4	20	261	286	88	55	2,479	2,304	3,289	2,905	156	80
Under 1 year...	...	13	13	...	...	1	...	3	2	...	...	164	143	...	1	725	605	261	189	10	3
1 year.....	1	2	1	...	...	...	...	1	2	...	...	33	43	...	1	295	278	170	158	15	13
2 years.....	...	2	1	...	...	...	...	...	...	...	...	9	12	...	...	108	95	78	53	6	6
3 years.....	...	...	2	...	...	...	...	...	...	...	...	4	4	...	...	45	51	47	38	6	4
4 years.....	...	...	3	...	...	...	...	...	...	...	...	...	3	...	...	29	25	30	18	5	1
5 years.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1,202	1,054	586	456	42	27
Under 5 yrs.	1	17	20	...	...	1	...	5	4	...	...	211	203	2	2	...	...	...	...	...	...
5 to 9 years...	...	...	...	...	...	...	2	1	2	...	...	1	6	...	...	38	63	74	61	7	3
10 to 14 years...	...	2	...	...	...	...	...	...	...	...	...	1	...	...	...	25	26	41	49	2	2
15 to 19 years...	1	...	...	...	...	...	1	1	...	...	...	...	...	...	...	47	38	112	106	7	2
20 to 24 years...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	91	117	215	235	14	6
25 to 29 years...	...	3	2	...	...	...	...	...	...	...	...	2	2	...	...	145	126	290	398	17	3
30 to 34 years...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	125	98	303	295	13	3
35 to 39 years...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	104	78	301	182	15	8
40 to 44 years...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	74	57	195	130	5	4
45 to 49 years...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	79	65	217	154	6	4
50 to 54 years...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	90	75	220	153	2	5
55 to 59 years...	3	1	...	...	...	...	...	...	...	...	...	...	...	...	...	81	69	171	173	7	2
60 to 64 years...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	82	82	191	141	6	1
65 to 69 years...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	95	88	144	129	5	6
70 to 74 years...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	106	88	144	129	4	1
75 to 79 years...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	74	88	102	105	4	...
80 to 84 years...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	49	81	72	70	4	...
85 yrs. and over	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	36	53	34	38	...	...
Colored.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	18	46	21	30	...	...
Chinese.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	124	120	180	133	5	...
Japanese.....	1	3	2	...	...	...	...	...	...	...	...	14	22	2	...	2	1	16	1	1	...

## DEATHS BY SEX, AGE, AND CAUSE OF DEATH FOR 1919—Continued.

DISEASES OF RESPIRATORY SYSTEM—Continued.												DISEASES OF DIGESTIVE SYSTEM.											
94		95		96		97		98		99A		99B		100		101		102		103			
Congestion of Lungs Pulmonary Apoplexy.		Gangrene of Lung.		Asthma.		Pulmonary Emphy- saemia.		Other Diseases of Respiratory System.		Diseases of Teeth and Gums.		Other Diseases of Mouth.		Angina and Other Diseases of Pharynx.		Diseases of Oesophagus.		Ulcer of the Stomach.		Other Diseases of Stomach (Cancer excepted).			
Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.			
34		5		88		37		41		33		7		148		5		251		103			
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
14	20	4	1	49	39	23	14	26	15	25	8	6	1	73	75	2	3	191	60	57	46		
Under 1 year...	...	...	...	2	...	1	1	1	2	4	...	1	...	4	8	...	1	1	...	16	13		
1 year...	1	...	...	...	...	...	...	...	...	2	...	1	...	10	7	...	...	...	...	3	6		
2 years...	...	...	...	...	...	...	...	...	...	2	1	...	...	3	4	...	...	...	...	2	...		
3 years...	...	...	...	...	...	...	...	...	...	2	...	...	...	2	5	...	...	...	...	1	...		
4 years...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	2	...	...	...	...	...	...		
5 years...	1	...	...	2	...	1	1	1	3	8	1	2	1	23	26	...	1	1	...	1	...		
6 years...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
7 years...	...	...	...	...	...	...	...	...	...	2	1	...	...	13	7	...	...	...	...	...	...		
8 years...	...	2	...	1	1	...	...	...	...	...	1	...	...	9	4	...	...	...	...	...	...		
9 years...	...	...	...	...	...	...	...	...	...	...	1	1	...	2	7	...	...	...	...	...	...		
10 to 14 years...	...	...	...	...	...	...	...	...	...	...	1	1	...	7	4	...	...	...	...	...	...		
15 to 19 years...	...	...	...	...	...	...	...	...	...	...	1	1	...	2	7	...	...	...	...	...	...		
20 to 24 years...	...	...	1	...	...	...	...	...	...	...	1	1	...	6	6	...	...	...	...	...	...		
25 to 29 years...	...	...	...	1	...	...	...	...	...	...	1	...	...	4	8	...	1	11	5	2	1		
30 to 34 years...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	4	...	...	15	7	1	...		
35 to 39 years...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	3	...	...	19	5	2	...		
40 to 44 years...	1	...	...	3	6	...	...	...	...	...	...	...	...	3	3	...	...	27	9	2	...		
45 to 49 years...	...	...	...	4	4	...	...	...	...	...	1	1	...	2	1	...	...	33	6	5	...		
50 to 54 years...	1	...	...	8	4	...	...	...	...	...	1	1	...	3	3	...	...	33	6	4	...		
55 to 59 years...	...	...	...	5	3	...	...	...	...	...	1	1	...	6	3	...	...	33	6	4	...		
60 to 64 years...	...	...	...	3	2	...	...	...	...	...	1	1	...	1	1	...	...	18	5	3	...		
65 to 69 years...	2	...	...	9	4	...	...	...	...	...	3	1	...	6	6	...	...	21	4	3	...		
70 to 74 years...	4	...	...	3	5	...	...	...	...	...	3	1	...	1	1	...	...	21	4	3	...		
75 to 79 years...	3	...	...	5	4	...	...	...	...	...	...	...	...	1	1	...	...	5	3	2	...		
80 to 84 years...	3	...	...	5	4	...	...	...	...	...	...	...	...	1	1	...	...	5	3	2	...		
85 yrs. and over	1	...	...	...	1	...	...	...	...	...	...	1	1	...	...	...	...	...	1	1	...		
Colored...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	5	...	...	...	...	...	...		
Chinese...	...	...	...	1	3	...	...	...	...	1	...	...	...	1	...	...	...	8	2	1	5		
Japanese...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...		

## DEATHS BY SEX, AGE, AND CAUSE OF DEATH FOR 1919—Continued.

DISEASES OF DIGESTIVE SYSTEM—Continued.														
	104		105		106		107		108		109		110A	
	Diarrhoea and Enteritis (under 2 years).		Diarrhoea and Enteritis (2 years and over).		Both Sexes.		Intestinal Parasites.		Appendicitis and Typhlitis.		Hernia, Intestinal Obstruction.		Diseases of Anus and Stercoral Fistulae.	
	Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.	
	2,361		304		..		2		690		598		23	
Total, all ages..	M.		F.		M.		F.		M.		F.		M.	
	1,329		1,032		104		140		402		300		13	
Total by sexes..	M.		F.		M.		F.		M.		F.		M.	
	1,329		1,032		104		140		402		300		13	
Under 1 year...	1,186		881		...		...		...		...		...	
	143		151		...		...		...		...		...	
1 year...	...		...		...		...		...		...		...	
2 years...	...		...		...		...		...		...		...	
3 years...	...		...		...		...		...		...		...	
4 years...	...		...		...		...		...		...		...	
5 to 9 years...	1,329		1,032		...		...		...		...		...	
10 to 14 years...	...		...		...		...		...		...		...	
15 to 19 years...	...		...		...		...		...		...		...	
20 to 24 years...	...		...		...		...		...		...		...	
25 to 29 years...	...		...		...		...		...		...		...	
30 to 34 years...	...		...		...		...		...		...		...	
35 to 39 years...	...		...		...		...		...		...		...	
40 to 44 years...	...		...		...		...		...		...		...	
45 to 49 years...	...		...		...		...		...		...		...	
50 to 54 years...	...		...		...		...		...		...		...	
55 to 59 years...	...		...		...		...		...		...		...	
60 to 64 years...	...		...		...		...		...		...		...	
65 to 69 years...	...		...		...		...		...		...		...	
70 to 74 years...	...		...		...		...		...		...		...	
75 to 79 years...	...		...		...		...		...		...		...	
80 to 84 years...	...		...		...		...		...		...		...	
85 yrs. and over	...		...		...		...		...		...		...	
Colored...	63		33		...		...		...		...		...	
Chinese...	...		...		...		...		...		...		...	
Japanese...	...		...		...		...		...		...		...	



## DEATHS BY SEX, AGE, AND CAUSE OF DEATH FOR 1919—Continued.

DISEASES OF DIGESTIVE SYSTEM—Continued.										DISEASES OF GENITO-URINARY SYSTEM.									
114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133
Biliary Calculi.	Other Diseases of Liver.	Diseases of Spleen.	Simple Peritonitis (Non-Puerperal).	Other Diseases of Digestive System (except Tuberculosis and Cancer).	Acute Nephritis.	Bright's Disease.	Chyluria.	Other Diseases of the Kidneys and Appendages.	Calculi of Urinary Tract.	Diseases of Bladder.									
Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.									
187	148	1	31	33	238	4,769	1	108	40	48									
M.	M.	M.	M.	M.	M.	M.	M.	M.	M.	M.									
54	55	93	14	12	136	2,381	1	63	30	37									
F.	F.	F.	F.	F.	F.	F.	F.	F.	F.	F.									
133	93	1	17	21	102	2,388	1	45	10	11									
Under 1 year...	Under 1 year...	Under 1 year...	Under 1 year...	Under 1 year...	Under 1 year...	Under 1 year...	Under 1 year...	Under 1 year...	Under 1 year...	Under 1 year...									
1 year...	1 year...	1 year...	1 year...	1 year...	1 year...	1 year...	1 year...	1 year...	1 year...	1 year...									
2 years...	2 years...	2 years...	2 years...	2 years...	2 years...	2 years...	2 years...	2 years...	2 years...	2 years...									
3 years...	3 years...	3 years...	3 years...	3 years...	3 years...	3 years...	3 years...	3 years...	3 years...	3 years...									
4 years...	4 years...	4 years...	4 years...	4 years...	4 years...	4 years...	4 years...	4 years...	4 years...	4 years...									
Ttl. under 5 yrs.	Ttl. under 5 yrs.	Ttl. under 5 yrs.	Ttl. under 5 yrs.	Ttl. under 5 yrs.	Ttl. under 5 yrs.	Ttl. under 5 yrs.	Ttl. under 5 yrs.	Ttl. under 5 yrs.	Ttl. under 5 yrs.	Ttl. under 5 yrs.									
5 to 9 years...	5 to 9 years...	5 to 9 years...	5 to 9 years...	5 to 9 years...	5 to 9 years...	5 to 9 years...	5 to 9 years...	5 to 9 years...	5 to 9 years...	5 to 9 years...									
10 to 14 years...	10 to 14 years...	10 to 14 years...	10 to 14 years...	10 to 14 years...	10 to 14 years...	10 to 14 years...	10 to 14 years...	10 to 14 years...	10 to 14 years...	10 to 14 years...									
15 to 19 years...	15 to 19 years...	15 to 19 years...	15 to 19 years...	15 to 19 years...	15 to 19 years...	15 to 19 years...	15 to 19 years...	15 to 19 years...	15 to 19 years...	15 to 19 years...									
20 to 24 years...	20 to 24 years...	20 to 24 years...	20 to 24 years...	20 to 24 years...	20 to 24 years...	20 to 24 years...	20 to 24 years...	20 to 24 years...	20 to 24 years...	20 to 24 years...									
25 to 29 years...	25 to 29 years...	25 to 29 years...	25 to 29 years...	25 to 29 years...	25 to 29 years...	25 to 29 years...	25 to 29 years...	25 to 29 years...	25 to 29 years...	25 to 29 years...									
30 to 34 years...	30 to 34 years...	30 to 34 years...	30 to 34 years...	30 to 34 years...	30 to 34 years...	30 to 34 years...	30 to 34 years...	30 to 34 years...	30 to 34 years...	30 to 34 years...									
35 to 39 years...	35 to 39 years...	35 to 39 years...	35 to 39 years...	35 to 39 years...	35 to 39 years...	35 to 39 years...	35 to 39 years...	35 to 39 years...	35 to 39 years...	35 to 39 years...									
40 to 44 years...	40 to 44 years...	40 to 44 years...	40 to 44 years...	40 to 44 years...	40 to 44 years...	40 to 44 years...	40 to 44 years...	40 to 44 years...	40 to 44 years...	40 to 44 years...									
45 to 49 years...	45 to 49 years...	45 to 49 years...	45 to 49 years...	45 to 49 years...	45 to 49 years...	45 to 49 years...	45 to 49 years...	45 to 49 years...	45 to 49 years...	45 to 49 years...									
50 to 54 years...	50 to 54 years...	50 to 54 years...	50 to 54 years...	50 to 54 years...	50 to 54 years...	50 to 54 years...	50 to 54 years...	50 to 54 years...	50 to 54 years...	50 to 54 years...									
55 to 59 years...	55 to 59 years...	55 to 59 years...	55 to 59 years...	55 to 59 years...	55 to 59 years...	55 to 59 years...	55 to 59 years...	55 to 59 years...	55 to 59 years...	55 to 59 years...									
60 to 64 years...	60 to 64 years...	60 to 64 years...	60 to 64 years...	60 to 64 years...	60 to 64 years...	60 to 64 years...	60 to 64 years...	60 to 64 years...	60 to 64 years...	60 to 64 years...									
65 to 69 years...	65 to 69 years...	65 to 69 years...	65 to 69 years...	65 to 69 years...	65 to 69 years...	65 to 69 years...	65 to 69 years...	65 to 69 years...	65 to 69 years...	65 to 69 years...									
70 to 74 years...	70 to 74 years...	70 to 74 years...	70 to 74 years...	70 to 74 years...	70 to 74 years...	70 to 74 years...	70 to 74 years...	70 to 74 years...	70 to 74 years...	70 to 74 years...									
75 to 79 years...	75 to 79 years...	75 to 79 years...	75 to 79 years...	75 to 79 years...	75 to 79 years...	75 to 79 years...	75 to 79 years...	75 to 79 years...	75 to 79 years...	75 to 79 years...									
80 to 84 years...	80 to 84 years...	80 to 84 years...	80 to 84 years...	80 to 84 years...	80 to 84 years...	80 to 84 years...	80 to 84 years...	80 to 84 years...	80 to 84 years...	80 to 84 years...									
85 yrs. and over	85 yrs. and over	85 yrs. and over	85 yrs. and over	85 yrs. and over	85 yrs. and over	85 yrs. and over	85 yrs. and over	85 yrs. and over	85 yrs. and over	85 yrs. and over									
Colored.	Colored.	Colored.	Colored.	Colored.	Colored.	Colored.	Colored.	Colored.	Colored.	Colored.									
Chinese.	Chinese.	Chinese.	Chinese.	Chinese.	Chinese.	Chinese.	Chinese.	Chinese.	Chinese.	Chinese.									
Japanese.	Japanese.	Japanese.	Japanese.	Japanese.	Japanese.	Japanese.	Japanese.	Japanese.	Japanese.	Japanese.									

## DEATHS BY SEX, AGE, AND CAUSE OF DEATH FOR 1919—Continued.

DISEASES OF GENITO-URINARY SYSTEM—Continued.													PUERPERAL DISEASES.	
125	126	127	128	129	130A	130B	131	132	133	134				
Diseases of Urethra, Urinary Abscess, &c.	Diseases of the Prostate.	Non-Venereal Diseases of Male Genital Organs.	Uterine Hemorrhage (not Puerperal).	Uterine Tumor (not Cancer).	Metritis.	Other Diseases of Uterus.	Ovarian Cysts and Tumors.	Salpingitis and Other Diseases of Female Genital Organs.	Diseases of Breast (not Puerperal or Cancer).	Accidents of Pregnancy.				
Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.				
22	209	8	..	141	15	30	51	78	2	128				
M.	M.	M.	M.	M.	M.	M.	M.	M.	M.	M.	F.	F.		
21	209	8	....	....	....	....	....	....	....	....	78	2		
....	....	6	....	....	....	....	....	....	....	....	....	....		
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....	....	7	....	....	....	....	....	....	....	....	....	....		
T'tl, under 5 yrs.	....	....	....	....	....	....	....	....	....	....	....	....		
5 to 9 years.	....	....	....	....	....	....	....	....	....	....	....	....		
10 to 14 years.	....	....	....	....	....	....	....	....	....	....	....	....		
15 to 19 years.	....	....	....	....	....	....	....	....	....	....	....	....		
20 to 24 years.	....	....	....	....	....	....	....	....	....	....	....	....		
25 to 29 years.	....	....	....	....	....	....	....	....	....	....	....	....		
30 to 34 years.	....	....	....	....	....	....	....	....	....	....	....	....		
35 to 39 years.	....	....	....	....	....	....	....	....	....	....	....	....		
40 to 44 years.	....	....	....	....	....	....	....	....	....	....	....	....		
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50 to 54 years.	....	....	....	....	....	....	....	....	....	....	....	....		
55 to 59 years.	....	....	....	....	....	....	....	....	....	....	....	....		
60 to 64 years.	....	....	....	....	....	....	....	....	....	....	....	....		
65 to 69 years.	....	....	....	....	....	....	....	....	....	....	....	....		
70 to 74 years.	....	....	....	....	....	....	....	....	....	....	....	....		
75 to 79 years.	....	....	....	....	....	....	....	....	....	....	....	....		
80 to 84 years.	....	....	....	....	....	....	....	....	....	....	....	....		
85 yrs. and over	....	....	....	....	....	....	....	....	....	....	....	....		
Colored.	....	....	....	....	....	....	....	....	....	....	....	....		
Chinese.	....	....	....	....	....	....	....	....	....	....	....	....		
Japanese.	....	....	....	....	....	....	....	....	....	....	....	....		
4	2	1	....	18	....	2	1	7	....	....	....	15		
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## BUREAU OF RECORDS

## DEATHS BY SEX, AGE, AND CAUSE OF DEATH FOR 1919—Continued.

PUERPERAL DISEASES—Continued.																	DISEASES OF SKIN AND CELLULAR TISSUE.			
	135	136		137		138		139A		139B		140A		140B	141		142	143		
	Puerperal Hemorrhage.	Other Accidents of Labor.		Puerperal Septicæmia.		Puerperal Albuminuria and Convulsions.		Puerperal Phlegmasia Alba Dolens.		Puerperal Embolism and Sudden Death.		Sequel of Delivery.		Puerperal Insanity.	Puerperal Diseases of Breast.		Gangrene.	Carbuncle.		
	Both Sexes.	Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.	Both Sexes.		Both Sexes.	Both Sexes.		
Total, all ages..	61	84		153		171		15		28		1		1	2		25	58		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
Total by sexes..	....	61	....	84	....	153	....	171	....	15	....	28	....	1	....	2	12	13	38	20
Under 1 year...	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
1 year...	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
2 years...	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
3 years...	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
4 years...	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Totl, under 5 yrs.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
5 to 9 years...	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
10 to 14 years...	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
15 to 19 years...	....	1	7	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
20 to 24 years...	....	15	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
25 to 29 years...	....	15	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
30 to 34 years...	....	16	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
35 to 39 years...	....	16	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
40 to 44 years...	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
45 to 49 years...	....	3	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
50 to 54 years...	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
55 to 59 years...	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
60 to 64 years...	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
65 to 69 years...	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
70 to 74 years...	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
75 to 79 years...	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
80 to 84 years...	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
85 yrs. and over	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Colored..	....	3	....	....	....	14	....	6	....	....	....	....	....	....	....	....	....	....	....	....
Chinese..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Japanese..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....

## DEATHS BY SEX, AGE, AND CAUSE OF DEATH FOR 1919—Continued.

	DISEASES OF SKIN AND CELLULAR TISSUE—Cont.				DISEASES OF LOCOMOTORY SYSTEM.								MALFORMATIONS.		DISEASES OF INFANCY.					
	144		145		146	147	148	149	150		151	152	152A	153						
	Phlegmon, Acute Abscess.	Other Diseases of Skin and Adnexa.	Both Sexes.	Diseases of Bones (Non-Tuberculous).	Arthritis. Other Diseases of Joints (except Tuberculosis and Rheumatism).	Both Sexes.	Both Sexes.	Both Sexes.	Other Diseases of Organs and Locomotion.	Congenital Malformations	Congenital Debility. Icterus and Sclerema.	Other Diseases Peculiar to Infancy (of which)	Injury During Birth.	Neglect.						
Total, all ages..	84		41	105		21		3		655		431		Both Sexes.						
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.				
Total by sexes..	50	34	19	22	77	28	13	8	1		2	373	282	1,822	1,367	630	422	274	157	
Under 1 year...	10	11	7	6	3	....	1	....	....		....	343	268	1,822	1,367	630	422	274	157	
1 year...	4	1	....	1	3	1	....	....	....		....	18	5	....	....	....	....	....	....	
2 years...	....	....	....	....	2	....	....	....	....		....	2	4	....	....	....	....	....	....	
3 years...	....	....	1	....	2	....	....	....	....		....	2	1	....	....	....	....	....	....	
4 years...	....	....	....	....	....	....	....	....	....		....	....	....	....	....	....	....	....	....	
T-6, under 5 yrs.	14	13	8	7	11	1	1	....	....		....	365	279	1,822	1,367	630	422	274	157	
5 to 9 years...	....	2	....	....	7	6	....	....	....		1	3	3	....	....	....	....	....	....	
10 to 14 years...	....	....	1	....	5	3	1	....	....		1	2	....	....	....	....	....	....	....	
15 to 19 years...	....	....	....	....	....	....	....	1	....		....	1	....	....	....	....	....	....	....	
20 to 24 years...	4	1	....	....	7	....	....	....	....		....	....	....	....	....	....	....	....	....	
25 to 29 years...	3	2	....	....	6	3	2	....	....		....	....	....	....	....	....	....	....	....	
30 to 34 years...	2	1	....	....	7	1	....	....	....		....	....	....	....	....	....	....	....	....	
35 to 39 years...	2	1	....	....	6	3	1	....	....		....	....	....	....	....	....	....	....	....	
40 to 44 years...	2	2	....	....	4	2	....	....	....		....	1	....	....	....	....	....	....	....	
45 to 49 years...	2	2	....	....	3	2	....	....	....		....	....	....	....	....	....	....	....	....	
50 to 54 years...	2	3	....	....	4	4	....	....	....		....	....	....	....	....	....	....	....	....	
55 to 59 years...	2	3	....	....	6	2	....	....	....		....	....	....	....	....	....	....	....	....	
60 to 64 years...	4	3	....	....	4	2	....	....	....		....	....	....	....	....	....	....	....	....	
65 to 69 years...	....	....	....	....	2	....	....	....	....		....	....	....	....	....	....	....	....	....	
70 to 74 years...	....	1	....	....	1	....	....	....	....		....	....	....	....	....	....	....	....	....	
75 to 79 years...	....	....	1	....	1	....	....	....	....		....	....	....	....	....	....	....	....	....	
80 to 84 years...	....	....	....	....	....	....	....	....	....		....	....	....	....	....	....	....	....	....	
85 yrs. and over	....	1	....	....	....	....	....	....	....		....	....	....	....	....	....	....	....	....	
Colored...	2	3	1	....	1	....	2	1	....		....	8	7	82	70	30	34	7	5	
Chinese...	....	....	....	....	1	....	....	....	....		....	....	....	1	1	....	....	....	....	
Japanese...	....	....	....	....	....	....	....	....	....		....	....	....	....	....	....	....	....	....	

## BUREAU OF RECORDS

## DEATHS BY SEX, AGE, AND CAUSE OF DEATH FOR 1919—Continued.

Old Age.		EXTERNAL CAUSES.											
154	155	156	157	158	159	160	161	162	163	164			
Senile Debility.	Suicide by Poison.	Suicide by Asphyxia.	Suicide by Hanging or Strangulation.	Suicide by Submerision.	Suicide by Firearms.	Suicide by Instruments.	Suicide by Precipitation from Height.	Suicide by Crushing.	Suicide by Other Methods.	Poisoning by Food.			
Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.	Both Sexes.			
285	39	290	75	25	116	38	107	11	2	10			
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
120	165	183	62	21	103	31	65	8	1	4	6		
Total by sexes.													
Under 1 year.													
1 year.													
2 years.													
3 years.													
4 years.													
4 to 5 yrs													
5 to 9 years.													
10 to 14 years.													
15 to 19 years.													
20 to 24 years.													
25 to 29 years.													
30 to 34 years.													
35 to 39 years.													
40 to 44 years.													
45 to 49 years.													
50 to 54 years.													
55 to 59 years.													
60 to 64 years.													
65 to 69 years.													
70 to 74 years.													
75 to 79 years.													
80 to 84 years.													
85 y's and over													
Colored.													
Chinese.													
Japanese.													



## DEATHS BY SEX, AGE, AND CAUSE OF DEATH FOR 1919—Continued.

## EXTERNAL CAUSES—Continued.

165A	165B Other Acute Poisonings.		166 Conflagra- tions.		167 Burns and Scalds.		168 Absorption of Deleterious Gases.		169 Accidental Submersion.		170 Pistol and Gunshot Wound.		171 Cuts and Stabs.		172 Deaths by Falls.		173 Deaths in Mines and Quarries.	
Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		
..		86		30		427		496		420		27		14		776		1
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
....	....	62	24	17	13	170	257	350	146	395	25	23	4	12	2	563	213	1
....	....	1	4	1	....	17	11	14	11	2	....	....	....	....	1	7	2	....
....	....	2	2	2	....	43	22	3	2	2	....	....	....	....	....	8	6	....
....	....	1	....	1	1	19	30	2	2	....	1	....	....	....	1	18	7	....
....	....	2	1	1	....	19	16	1	1	....	....	2	....	....	....	19	11	....
....	....	....	....	....	2	16	31	....	1	3	....	1	....	....	....	13	5	....
....	....	6	7	5	3	114	110	20	17	7	....	1	....	....	....	63	31	....
....	....	....	....	1	2	10	56	4	3	31	2	1	....	....	....	45	11	....
....	....	....	....	....	....	1	....	....	1	37	....	....	....	....	....	20	5	....
....	....	2	....	....	....	1	8	3	6	53	1	....	....	....	....	20	3	....
....	....	7	3	1	1	5	4	20	10	39	2	....	....	....	....	25	6	....
....	....	6	3	2	....	7	13	29	8	41	2	....	....	....	....	28	6	....
....	....	12	....	....	....	3	....	3	5	24	....	....	....	....	....	47	9	....
....	....	....	....	2	....	1	3	42	14	40	....	....	....	....	....	52	9	....
....	....	7	....	1	1	....	8	25	7	28	....	....	....	....	....	44	12	....
....	....	7	2	1	....	3	3	30	6	31	3	....	....	....	....	45	7	....
....	....	7	3	1	1	....	9	34	11	28	2	....	....	....	....	49	10	....
....	....	3	....	2	....	5	6	32	18	12	....	....	....	....	....	43	8	....
....	....	2	....	....	....	....	5	4	24	13	....	....	....	....	....	22	13	....
....	....	....	....	....	....	1	1	9	24	10	....	....	....	....	....	14	20	....
....	....	....	....	....	....	2	2	6	10	7	....	....	....	....	....	15	16	....
....	....	....	....	....	....	1	1	4	12	....	....	....	....	....	....	14	18	....
....	....	....	....	....	....	....	....	....	6	4	....	....	....	....	....	10	9	....
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## DEATHS BY SEX, AGE, AND CAUSE OF DEATH FOR 1919—Continued.

EXTERNAL CAUSES—Continued.																			
174		175		176		177A		177B		178		179		180		181		182	
Deaths by Machinery.		Deaths by Other Crushing Agencies, Wagons, &c.		Deaths by Animals not Snakebites, Hydrophobia or Stings.		Physical Exhaustion.		Hunger and Thirst.		Excessive Cold.		Sunstroke		Lightning.		Other Electrical Accidents.		Homicides by Firearms.	
Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.	
71		1,188		10		..		..		5		35		..		20		164	
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
63	8	940	248	9	1	....	....	....	....	5	....	16	19	....	....	18	2	139	25
...	...	2	2	...	...	...	...	...	...	...	...	4	3	...	...	...	...	...	...
1	...	3	6	1	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...
...	...	32	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	38	15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1	...	83	39	1	...	...	...	...	...	...	...	...	6	...	...	...	1	...	...
1	...	191	59	2	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...
2	...	96	16	1	...	...	...	...	...	...	...	...	1	...	...	...	...	12	...
7	1	50	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	26	...
6	1	49	5	...	1	...	...	...	...	...	...	...	...	...	...	...	...	25	...
3	...	53	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	31	...
...	...	25	7	...	...	...	...	...	...	...	...	...	2	...	...	...	...	4	...
6	2	49	10	2	...	...	...	...	...	...	...	...	1	...	...	...	...	15	...
9	...	64	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14	...
...	...	35	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	...
...	...	40	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...
...	...	53	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
13	1	49	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...
...	...	43	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
2	1	49	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...
...	...	55	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
...	...	60	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
...	...	33	19	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...
...	...	24	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
1	...	29	14	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	12	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
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3	...	19	2	...	...	...	...	...	...	...	...	1	2	...	...	2	...	12	7
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## DEATHS BY SEX, AGE, AND CAUSE OF DEATH FOR 1919--Continued.

[illegible]

## DEATHS BY SEX, AGE, AND CAUSE OF DEATH FOR 1919—Continued.

SUMMARY.																						
	I		A		B		II		III		IV		V		VI		VII		VIII		IX	
	General Diseases.		Tuberculous Diseases.		Cancer.		Diseases of the Nervous System and Organs of Sense.		Diseases of Circulatory System.		Diseases of Respiratory System.		Diseases of Digestive System.		Diseases of Genito and Urinary System.		Puerperal Diseases.		Diseases of the Skin and Cellular Tissue.		Diseases of Locomotory System.	
	Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.	
Total, all ages...	23,337		8,498		5,147		2,680		14,077		12,164		5,367		5,760		644		208		129	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Total by sexes...	12,513		3,152		2,871		1,467		6,911		5,755		2,992		2,886		644		119		89	
Under 1 year...	553	445	118	76	1	3	129	88	28	29	1,168	946	1,273	931	20	19			22	27	4	....
1 year...	430	374	90	82	3	4	51	35	10	5	517	496	167	175	7	11			4	2	3	....
2 years...	285	240	54	47	2	3	30	25	11	7	201	167	54	40	6	5			....	2	3	....
3 years...	187	169	35	24	2	8	21	20	9	8	103	95	30	32	6	3			1	....	2	....
4 years...	158	137	34	25	...	1	13	10	14	22	65	47	27	16	9	3			....	....	2	....
4 <sup>th</sup> under 5yrs.	1,613	1,365	331	254	7	19	244	178	72	71	2,054	1,751	1,551	1,194	48	41			27	31	12	1
5 to 9 years...	354	316	90	72	6	8	50	45	106	82	122	138	80	59	16	17			....	2	7	3
10 to 14 years...	158	243	65	102	4	5	36	34	94	120	71	77	58	35	16	14			....	2	7	1
15 to 19 years...	390	499	219	328	8	5	40	30	70	96	172	149	51	45	20	19			33	9	5	3
20 to 24 years...	797	942	492	510	18	14	39	39	86	94	326	365	55	55	37	52			95	1	7	3
25 to 29 years...	1,029	1,107	571	471	25	44	52	41	122	130	460	540	72	56	39	70			172	4	5	8
30 to 34 years...	1,102	825	609	360	48	83	74	49	158	145	449	402	84	84	73	118			150	7	2	7
35 to 39 years...	1,092	657	570	231	137	239	104	74	311	308	284	204	133	100	149	197			136	5	6	4
40 to 44 years...	1,018	691	570	164	222	338	143	94	320	393	316	231	149	94	235	250			48	5	7	4
45 to 49 years...	1,053	717	454	164	287	378	111	82	641	611	335	243	164	117	311	289			136	4	6	4
50 to 54 years...	1,014	778	454	162	287	378	111	82	764	677	289	266	141	113	367	299			2	4	7	2
55 to 59 years...	870	693	285	74	386	411	100	93	884	782	321	250	135	95	367	289			....	9	3	....
60 to 64 years...	795	623	222	62	286	317	97	76	811	861	281	248	90	83	334	336			....	3	3	....
65 to 69 years...	566	558	112	47	223	258	66	82	816	946	212	232	48	68	326	278			....	6	4	2
70 to 74 years...	380	430	60	31	114	132	46	70	583	784	155	174	34	58	251	234			....	3	2	....
75 to 79 years...	184	212	23	11	42	56	26	36	363	487	86	120	20	31	130	131			....	3	2	....
80 to 84 years...	71	85	11	3	14	32	15	31	224	357	49	88	13	15	72	84			....	2	3	....
85 yrs. and over	27	53	4	3	14	32	15	31	224	357	49	88	13	15	72	84			....	4	3	1
Colored.....	605	551	398	308	39	88	62	57	270	275	105	65	92	126	92	126			41	4	3	1
Chinese.....	64	36	1	1	5	...	3	...	26	26	6	...	6	...	6	...			....	....	....	....
Japanese.....	17	2	...	...	...	...	...	...	3	1	2	...	2	...	2	...			....	....	....	....

## ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

## DEATHS BY SEX, AGE, AND CAUSE OF DEATH FOR 1919—Continued.

SUMMARY—Continued.																			
	X		XI		XII		XIII		A		B		C		XIV		Total Males.	Total Females.	Total Both Sexes.
	Malfor- mations.		Diseases of Infancy.		Diseases of Old Age.		External Causes.		Suicides.		Homicides.		Accidents.		Ill Defined Causes.				
	Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.				
Total, all ages..	655		4,241		285		4,808		703		279		3,826		78		39,883	34,550	74,433
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
Total by sexes..	373	282	2,452	1,789	120	165	3,509	1,299	487	216	232	47	2,790	1,036	41	37			
Under 1 year...	343	268	2,452	1,789	...	...	62	41	...	...	3	4	59	37	1	2	6,054	4,585	10,639
1 year.....	18	5	...	...	...	...	70	40	...	...	1	1	69	39	16	18	1,292	1,161	2,453
2 years.....	...	4	...	...	...	...	54	52	...	...	...	...	78	52	1	2	647	545	1,192
3 years.....	2	1	...	...	...	...	78	42	...	...	...	...	74	42	...	...	439	370	809
4 years.....	...	...	...	...	...	...	71	55	...	...	...	...	71	55	...	...	359	292	651
T'tl, under 5 yrs.	365	279	2,452	1,789	...	...	335	230	...	...	4	5	331	225	18	23	8,791	6,953	15,744
5 to 9 years.....	3	3	...	...	...	...	296	136	...	...	3	...	293	136	1	2	1,035	837	1,872
10 to 14 years.....	2	1	...	...	...	...	166	34	...	...	4	...	160	34	...	...	610	561	1,171
15 to 19 years.....	...	...	...	...	...	...	171	40	...	...	18	4	144	26	...	...	929	916	1,845
20 to 24 years.....	1	...	...	...	...	...	249	77	...	...	36	8	183	48	3	...	1,607	1,723	3,330
25 to 29 years.....	...	...	...	...	...	...	288	84	...	...	49	6	197	54	6	...	2,080	2,210	4,290
30 to 34 years.....	...	...	...	...	...	...	285	74	...	...	38	5	195	44	3	...	2,242	1,852	4,094
35 to 39 years.....	...	...	...	...	...	...	351	94	...	...	25	7	251	58	3	...	2,509	1,686	4,195
40 to 44 years.....	...	...	...	...	...	...	254	72	...	...	19	8	184	45	...	...	2,265	1,705	3,970
45 to 49 years.....	1	...	...	...	...	...	262	61	...	...	12	1	194	40	...	...	2,689	1,859	4,548
50 to 54 years.....	...	...	...	...	...	...	227	75	...	...	8	2	173	48	...	...	2,816	2,207	5,023
55 to 59 years.....	...	...	...	...	...	...	204	51	...	...	6	...	153	37	...	...	2,721	2,196	4,917
60 to 64 years.....	...	...	...	...	...	...	146	79	...	...	5	...	100	63	...	...	2,788	2,228	5,016
65 to 69 years.....	...	...	...	...	...	...	97	55	...	...	4	1	70	51	...	...	2,296	2,230	4,526
70 to 74 years.....	...	...	...	...	...	...	81	54	...	...	3	...	70	47	...	...	1,954	2,068	4,022
75 to 79 years.....	...	...	...	...	...	...	56	38	...	...	2	1	47	36	...	...	1,342	1,399	2,741
80 to 84 years.....	...	...	...	...	...	...	31	21	...	...	2	...	29	20	...	...	762	956	1,718
85 yrs. and over	...	...	...	...	...	...	10	24	...	...	...	...	19	24	...	...	447	718	1,165
Colored.....	8	7	112	104	4	6	104	43	9	1	22	9	73	33	3	5	1,639	1,564	3,203
Chinese.....	...	...	1	1	...	...	5	1	1	...	1	...	3	1	...	...	131	5	136
Japanese.....	...	...	1	1	...	...	1	...	...	...	...	...	...	...	...	...	29	7	36



BUREAU OF RECORDS

TOTAL DEATHS BY AGE GROUPS—1919.

	Manhattan.		The Bronx.		Brooklyn.		Queens.		Richmond.		City of New York.	
	Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.		Both Sexes.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
Total, all ages.....	33,304	14,972	4,173	4,085	13,610	12,199	2,209	2,630	1,059	664	39,883	34,550
Total, by sexes.....	18,332	2,110	639	454	2,074	1,605	339	326	134	90	6,054	4,585
Under 1 year.....	2,818	559	117	120	434	402	69	64	22	16	1,292	1,161
1 year.....	650	249	30	35	236	182	36	33	9	17	647	545
2 years.....	282	159	30	35	161	135	35	29	7	7	439	370
3 years.....	197	135	30	35	131	93	29	25	8	4	359	292
4 years.....	152	135	30	35	131	93	29	25	8	4	359	292
Total under 5 years.....	4,090	3,212	918	713	3,036	2,417	558	477	180	134	8,791	6,953
5 to 9 years.....	446	327	102	104	369	315	62	68	26	23	1,035	837
10 to 14 years.....	222	216	83	80	226	205	43	45	16	12	610	561
15 to 19 years.....	367	363	96	118	370	345	75	72	21	15	929	916
20 to 24 years.....	687	722	163	242	578	594	107	125	72	40	1,607	1,723
25 to 29 years.....	988	952	212	317	663	733	140	179	77	48	2,080	2,210
30 to 34 years.....	1,096	825	235	244	720	591	139	172	62	20	2,242	1,832
35 to 39 years.....	1,261	822	248	168	769	552	154	112	77	31	2,309	1,686
40 to 44 years.....	1,129	789	242	215	714	571	138	104	42	26	2,263	1,706
45 to 49 years.....	1,297	854	266	215	896	596	147	165	45	38	2,689	1,839
50 to 54 years.....	1,386	979	280	268	916	757	160	173	67	48	2,816	2,207
55 to 59 years.....	1,207	954	314	260	921	769	212	173	75	50	2,721	2,196
60 to 64 years.....	1,286	944	296	247	926	816	205	189	75	52	2,728	2,228
65 to 69 years.....	1,002	922	250	260	817	822	158	175	65	34	2,596	2,230
70 to 74 years.....	839	885	190	246	726	790	130	159	63	34	1,954	2,144
75 to 79 years.....	545	592	148	202	486	636	115	128	48	41	1,342	1,509
80 to 84 years.....	297	343	78	113	301	395	57	77	29	28	762	1,036
85 years and over.....	178	271	46	70	176	292	31	58	16	27	447	718
Colored.....	1,177	1,106	68	46	333	347	66	55	25	11	1,639	1,563
Chinese.....	104	5	2	.....	16	.....	4	.....	5	.....	131	5
Japanese.....	20	7	1	.....	5	.....	1	.....	2	.....	29	7

## ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

## MONTHLY AND ANNUAL PRECIPITATION.

Year.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	An- nual.
1871....	1.15	3.86	4.90	3.41	4.49	7.14	3.60	5.48	2.13	7.07	4.33	1.24	48.80
1872....	2.40	1.45	3.93	2.49	2.44	2.94	9.45	6.13	3.44	3.53	5.04	2.54	45.78
1873....	5.05	1.73	1.92	3.05	4.08	1.29	4.15	7.66	2.51	2.47	4.01	2.06	39.98
1874....	4.82	2.41	1.88	<b>7.02</b>	2.16	2.87	3.22	2.53	7.21	1.82	2.21	1.69	39.84
1875....	2.87	3.23	4.25	3.21	1.47	1.66	5.23	<b>10.42</b>	2.51	3.13	4.43	2.78	45.19
1876....	1.21	5.39	<b>7.00</b>	3.79	3.94	2.87	5.72	2.97	5.24	1.68	4.40	2.29	47.40
1877....	3.55	1.67	6.65	3.18	0.73	3.31	3.86	2.54	1.33	7.69	5.48	<b>0.95</b>	40.94
1878....	4.53	3.40	4.02	1.93	3.73	2.91	5.26	7.30	3.20	1.71	3.74	4.93	46.66
1879....	3.05	2.74	2.04	4.06	2.23	3.42	3.39	5.17	1.45	<b>0.58</b>	2.22	5.86	36.21
1880....	2.19	2.11	4.66	3.18	0.82	1.69	6.67	4.40	2.26	2.81	2.40	4.15	37.34
1881....	5.41	5.06	6.78	<b>1.00</b>	2.33	6.23	1.31	1.56	1.38	2.10	2.87	4.37	40.40
1882....	<b>6.15</b>	4.36	2.32	2.15	4.21	2.82	2.75	1.63	<b>14.51</b>	1.69	1.80	2.22	46.61
1883....	3.22	4.58	1.63	3.82	3.03	4.00	3.37	2.29	3.57	4.27	1.65	3.40	38.83
1884....	6.07	5.09	4.43	2.66	4.35	4.16	6.14	8.56	<b>0.15</b>	3.63	3.44	<b>6.66</b>	55.34
1885....	3.50	6.09	1.19	2.44	2.22	1.86	3.04	7.70	0.72	5.62	5.05	2.69	42.12
1886....	5.02	5.90	3.54	4.95	6.53	3.01	2.57	1.18	1.79	3.90	4.61	3.73	46.73
1887....	4.19	5.26	3.51	3.67	0.99	<b>7.70</b>	6.75	3.66	2.30	2.36	2.04	4.20	46.63
1888....	5.14	4.03	5.64	3.57	4.87	1.68	1.27	6.35	7.40	4.14	4.81	4.05	52.95
1889....	5.38	3.07	4.09	5.90	3.25	2.38	<b>9.63</b>	3.39	7.43	2.53	<b>9.82</b>	1.81	<b>58.68</b>
1890....	2.95	3.86	6.67	2.58	3.11	4.19	3.96	4.06	8.21	6.46	0.82	5.43	52.30
1891....	5.73	4.69	4.22	2.37	3.10	1.18	4.11	5.87	2.12	2.69	2.06	3.30	41.44
1892....	5.61	1.27	4.62	2.36	4.30	2.97	2.45	3.90	0.87	0.63	8.28	1.64	38.90
1893....	3.56	<b>7.81</b>	4.47	6.36	5.06	2.56	1.26	7.18	2.27	5.28	3.71	3.49	53.01
1894....	2.70	5.15	1.69	2.51	3.90	<b>0.86</b>	2.89	1.54	8.04	5.83	3.83	5.23	44.17
1895....	5.62	<b>0.82</b>	2.80	2.92	2.04	2.57	4.40	4.12	0.95	4.04	3.58	1.87	35.73
1896....	1.25	5.50	6.13	1.24	2.01	6.38	4.45	2.46	3.04	1.71	2.12	1.70	37.99
1897....	3.51	2.72	2.51	2.96	5.30	2.98	9.52	3.14	1.64	0.72	4.44	4.83	44.27
1898....	3.95	4.06	2.92	3.23	5.55	1.28	4.76	3.12	1.28	6.14	5.90	2.93	45.12
1899....	4.08	5.46	6.78	1.23	1.14	1.83	6.20	3.90	5.89	2.05	2.13	1.37	42.06
1900....	4.18	5.16	3.18	2.06	4.05	3.36	4.33	2.69	2.36	4.17	4.26	1.98	41.78
1901....	2.07	0.86	5.18	6.82	7.01	0.94	5.41	6.88	2.33	2.20	1.31	6.05	47.06
1902....	2.28	5.78	4.32	3.51	1.23	5.91	3.12	3.29	3.59	6.66	1.19	6.19	47.07
1903....	3.44	3.83	3.65	2.88	<b>0.33</b>	7.42	3.23	5.96	2.60	<b>11.55</b>	0.90	2.81	48.60
1904....	3.38	2.18	3.44	3.94	1.61	2.70	4.31	7.13	3.18	3.21	2.62	3.87	41.57
1905....	3.93	2.79	3.65	2.45	1.12	4.18	6.01	5.23	7.11	2.67	1.67	3.67	44.48
1906....	2.98	2.57	5.58	5.78	4.67	1.70	3.21	3.68	2.54	4.30	1.28	3.53	41.82
1907....	3.26	2.52	3.80	3.89	4.08	3.29	1.18	2.48	8.00	3.82	5.05	3.91	45.28
1908....	3.84	5.36	2.15	1.82	<b>9.10</b>	1.70	4.33	5.65	1.60	1.92	0.75	3.21	41.43
1909....	3.33	4.31	3.19	5.93	1.72	3.17	1.98	7.94	2.66	0.74	1.58	5.00	41.55
1910....	5.61	4.07	<b>0.86</b>	4.53	1.66	5.10	<b>0.23</b>	2.13	1.43	3.79	4.62	1.95	35.98
1911....	2.27	3.17	2.87	3.06	0.91	4.63	1.55	7.38	1.51	5.38	4.22	3.39	40.34
1912....	1.86	2.06	5.68	3.61	3.94	1.17	3.26	2.77	3.38	4.32	2.21	4.24	38.50
1913....	2.77	2.18	5.17	5.32	2.51	1.43	3.02	1.84	5.28	10.56	1.91	2.40	44.39
1914....	3.69	3.27	4.55	2.67	1.97	1.83	5.13	2.18	0.20	1.92	2.08	4.01	33.50
1915....	5.61	5.03	1.14	2.10	3.23	3.66	4.60	5.37	2.52	2.25	1.09	4.23	40.83
1916....	<b>1.08</b>	4.49	3.71	3.28	3.49	3.94	3.44	<b>0.59</b>	2.98	0.63	1.57	3.97	<b>33.17</b>
1917....	2.44	1.70	3.38	2.35	3.29	5.57	5.96	1.79	2.74	5.68	<b>0.68</b>	3.70	39.28
1918....	3.41	1.98	1.51	3.78	3.37	4.12	3.61	1.70	3.54	0.83	2.04	3.70	33.59
1919....	3.35	3.45	4.69	2.55	3.81	2.23	7.93	7.74	3.60	3.17	3.33	2.53	48.38
Means.	3.65	3.70	3.87	3.38	3.19	3.24	4.23	4.38	3.43	3.63	3.18	3.42	43.27

Note.—Highest and lowest monthly and annual precipitation in bold-face figures.

## BUREAU OF RECORDS

## DAILY MAXIMUM TEMPERATURE—1919.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1.....	<b>60</b>	34	53	35	52	74	88	80	72	58	<b>70</b>	41
2.....	<b>60</b>	41	46	44	67	92	89	75	71	63	60	44
3.....	37	49	54	57	70	91	95	78	68	<b>85</b>	50	30
4.....	30	43	58	61	80	<b>92</b>	<b>98</b>	79	76	65	52	31
5.....	30	42	58	53	86	83	96	74	76	76	47	34
6.....	30	39	44	62	60	75	84	76	82	<b>77</b>	48	44
7.....	40	41	42	<b>76</b>	61	85	80	84	90	<b>71</b>	47	48
8.....	40	37	47	64	72	67	78	85	<b>91</b>	56	48	45
9.....	38	35	56	55	64	61	71	76	87	64	50	52
10.....	30	32	51	50	48	74	72	76	70	78	55	49
11.....	39	38	48	61	51	82	71	80	81	81	54	30
12.....	28	35	50	62	55	75	77	78	70	53	58	40
13.....	33	47	59	58	73	83	80	71	72	60	58	<b>60</b>
14.....	43	46	36	59	74	78	76	66	74	59	43	58
15.....	43	46	37	51	60	76	72	74	66	71	43	27
16.....	44	40	40	54	59	78	76	78	66	<b>77</b>	50	24
17.....	45	41	55	57	66	78	75	68	73	64	55	22
18.....	46	38	62	54	67	75	72	65	67	61	58	14
19.....	45	38	44	62	69	74	81	78	67	64	47	25
20.....	44	43	60	63	65	82	73	81	81	55	35	31
21.....	46	38	<b>65</b>	62	65	85	76	85	78	60	51	32
22.....	47	39	47	66	64	74	76	85	76	63	<b>51</b>	40
23.....	48	46	56	68	72	77	82	86	70	59	50	45
24.....	44	47	54	54	71	85	87	89	69	60	48	29
25.....	47	44	62	42	72	77	83	77	76	61	51	29
26.....	51	46	58	45	80	73	82	72	66	61	59	33
27.....	50	42	57	63	82	74	89	70	65	68	47	39
28.....	46	<b>51</b>	37	59	73	72	90	72	72	81	41	41
29.....	41	.....	31	50	<b>90</b>	68	79	78	72	56	60	26
30.....	42	.....	44	62	86	74	79	77	76	56	62	37
31.....	41	.....	38	.....	84	.....	79	80	.....	70	.....	39
Means....	42	41	50	57	69	78	81	77	74	66	52	37

Note.—Highest monthly temperatures in bold-face figures.

## DAILY MINIMUM TEMPERATURE—1919.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1.....	41	24	33	<b>21</b>	<b>44</b>	59	<b>58</b>	66	62	48	59	28
2.....	37	25	28	22	50	58	72	61	65	52	39	29
3.....	30	25	35	34	53	72	74	60	62	63	37	18
4.....	17	33	37	43	57	71	77	64	62	59	41	17
5.....	14	28	43	42	57	68	80	68	59	61	41	25
6.....	19	26	28	46	49	65	71	68	61	62	37	29
7.....	25	24	28	41	46	65	65	68	68	45	36	39
8.....	30	32	34	47	57	55	63	62	72	43	37	37
9.....	19	26	36	43	47	53	61	59	59	46	32	42
10.....	9	19	36	40	42	56	62	60	59	63	36	22
11.....	12	<b>16</b>	37	50	44	60	60	65	63	53	47	20
12.....	<b>9</b>	29	34	51	44	59	58	67	56	41	51	29
13.....	17	31	36	45	47	57	64	59	53	<b>39</b>	34	40
14.....	30	38	26	41	54	64	63	<b>56</b>	57	51	30	22
15.....	34	37	30	43	46	62	63	62	60	55	34	17
16.....	28	28	35	39	45	60	66	65	60	61	35	13
17.....	35	26	39	42	49	64	67	64	56	50	39	2
18.....	36	25	40	42	53	62	65	61	51	45	39	<b>0</b>
19.....	34	22	36	39	54	61	69	61	54	46	29	12
20.....	30	23	41	44	54	63	69	64	65	44	<b>26</b>	17
21.....	34	32	46	49	55	65	70	68	65	51	28	24
22.....	39	35	36	41	54	59	72	70	68	55	41	30
23.....	41	33	31	46	57	60	70	69	57	52	39	28
24.....	28	35	40	33	56	66	68	70	54	51	36	25
25.....	26	34	36	27	57	66	72	60	57	47	34	17
26.....	36	23	40	29	60	66	66	59	<b>55</b>	53	46	16
27.....	35	22	37	39	61	66	69	58	<b>51</b>	59	35	30
28.....	33	33	<b>22</b>	47	56	59	72	59	53	48	30	22
29.....	33	.....	24	45	58	<b>52</b>	67	59	57	43	37	17
30.....	32	.....	26	42	71	55	62	65	<b>57</b>	45	32	18
31.....	29	.....	23	.....	65	.....	65	66	.....	56	.....	29
Means....	28	28	34	40	53	62	67	63	59	51	37	23

Note.—Lowest monthly temperatures in bold-face figures.

U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

CHARLES F. MARVIN, Chief.

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## ANNUAL METEOROLOGICAL SUMMARY, 1919

WITH COMPARATIVE DATA.

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New York, N. Y.

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Compiled under the direction of James H. Scarr, Meteorologist.

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New York, N. Y., U. S. Weather Bureau.

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### ANNUAL SUMMARY

The mean temperature,  $52.8^{\circ}$ , is  $1.1^{\circ}$  above normal. The first seven months and October and November were above normal; September was normal; August and December, below. The highest temperature,  $98^{\circ}$ , occurred on July 4th; the lowest, zero, on December 13th.

*Precipitation*, 48.38 inches, is 3.75 inches above normal, and the *greatest since* 1903. March, May, July, August and September had more than normal, although only July and August had important plus departures. Longest period without precipitation, 11 days, May 26th-June 5th; longest period with daily rains (traces included), 9 days, July 15th-23d. The number of cloudy days, 159, is the *greatest of record*; and the number of days with dense fog or dense haze, 34, is the *greatest since* 1898.

*Records were broken* as follows: *January*—Warmest New Year's Day. *March*—Greatest monthly wind movement and maximum wind velocity. *June*—Greatest number of days with dense fog or dense haze. *Year*—Greatest number of cloudy days.

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### WEATHER BY MONTHS

*January*—Mean temperature,  $35.2^{\circ}$ , is  $5^{\circ}$  above normal,  $13.2^{\circ}$  higher than 1918, and has been *exceeded but twice* in the last 13 years. The extremes,  $60^{\circ}$  on the 1st, and  $9^{\circ}$  on the 10th, are not unusual; but the maximum,  $60^{\circ}$  on the 1st, is the *highest New Year's temperature* of record. Temperatures were below normal only on the 4th-6th and 9th-13th. Precipitation, 3.35 inches, is 0.44 inch below normal. Two-thirds of this occurred on the 1st and 3d. Total snowfall, 0.3 inch on the 8th, equals *the least of record*. Gales were frequent, and the maximum, 84nw. on the 24th, has been *exceeded but once*.



## ANNUAL METEOROLOGICAL SUMMARY

*February*—Mean temperature,  $34.7^{\circ}$ , is  $4^{\circ}$  above normal and, except 1909 and 1915, the *highest since 1891*. Except for the winters of 1879-80, 1889-90, and 1912-13, this is the *warmest winter of record*. The maximum,  $51^{\circ}$  on the 28th, is not unusual, but the minimum,  $16^{\circ}$  on the 11th, is the *highest monthly minimum since 1897*. The temperature was below normal on only 4 days. Precipitation, 3.45 inches, was mostly rain, well distributed, and only 0.29 inch below normal. The total snowfall, 0.7 inch, occurred on 3 days and is, with one exception, the *least of record*. Gales were frequent, though the maximum, 66 nw. on the 26th, is not unusual.

*March*—Mean temperature,  $42.0^{\circ}$ , is  $4.5^{\circ}$  above normal, the *highest since 1913*. The last 4 days were the coldest of the month. The extremes,  $65^{\circ}$  on the 21st and  $22^{\circ}$  on the 28th, are not unusual. Precipitation, 4.69 inches, is 0.59 inch above normal. Total snowfall, 1.9 inches on two days, is one-fourth the normal, but more than half the fall for the entire winter. Wind movement, 17,958 miles, is the *greatest of record*. Gales were frequent. The maximum, 92 nw. on the 28th, is but 4 below the highest of record. For a 24-hour period on the 28-29th an average hourly velocity of 67 miles was maintained.

*April*—Temperature and precipitation were slightly above normal. The last week was the coldest except for the first two days which ended the cold wave of the last week in March. Traces of snow occurred on 3 days, that on the 26th being *the last of the season*. The total winter's snowfall, 3.3 inches, is about one-third of the previous *least of record*. The last killing frost occurred on the 25th. Gales were frequent but not unusually severe. Cloudiness was above the normal. Thunderstorms occurred on the 15th and 16th.

*May*—Had *two warm periods*, 2d-5th, and 23d-31st. The rest of the month was generally cool, though the mean,  $61^{\circ}$ , is  $2^{\circ}$  above the normal. The extremes,  $42^{\circ}$  on the 10th, and  $90^{\circ}$  on the 29th, are not unusual. There were 12 days with rain—one more than normal. The total, 3.81 inches, is 0.63 inch more than normal. Wind movement was about normal, but the prevailing direction, east, is *unusual*. Sunshine was deficient, and cloudiness above normal. Dense fog occurred on 4 days, and thunderstorms on the 5th, 17th, 23d, and 24th.

*June*—Ninth was the last of a 16-day period of warm, dry weather. The rest of month averaged cool, though the mean,  $69.7^{\circ}$ , is  $1.2^{\circ}$  above normal. The maximum,  $92^{\circ}$  on the 2d, and the minimum,  $52^{\circ}$  on the 29th, are not unusual. There were 16 days with haze or dense fog, probably the *greatest number of record*. Precipitation was deficient in frequency and amount. Thunderstorms occurred on the 20th and 27th. The former was severe in upper Manhattan, the Bronx and Queens, and *much damage* resulted. It was accompanied by *hail*. Wind movement was light, and there were no general gales.



## ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

*July*—Is the *tenth consecutive month* with an excess in temperature, the *accumulated excess* in this period being 813°. The first six days were warm. The maximum, 98.2°, was on the 4th. The rest of the month was generally cool, cloudy and wet. Rain occurred on 14 days—2 more than normal, but 5 less than the greatest of record. The total, 6.64 inches, is 3.39 inches more than normal, and the *greatest since 1897*. Thunderstorms occurred on the 6th, 16th, 19th, 26th, and 28th. The storm on the 28th was severe; *violent wind squalls* doing much damage in the City, and in nearby New Jersey and Long Island sections. Gales were frequent, and the total wind movement, 11,004 miles, is well above normal.

*August*—Was cool and wet. The mean temperature, 70.2°, is 2.0° below normal. The maximum, 89° on the 24th, and the minimum 56° on the 14th, are not unusual. Precipitation (mostly at night) occurred on 11 days, one more than normal. The total, 7.74 inches, is 3.21 inches above normal and the greatest, except once, since 1884. Thunderstorms occurred on the 15th, 18th, 24th and 25th. *Damage in portions of the City* and vicinity resulted from gales or squalls on the 14th and 25th.

*September*—Mean temperature, 66.5°, is exactly normal. The extremes, 91° on the 8th, and 51° on the 27th, are well within the record. Precipitation was normal in amount and frequency. Wind movement was about normal, and *no severe gales* occurred. A thunderstorm occurred on the 11th, and dense fog on four different days.

*October*—Mean temperature, 58.4°, is 2.8° above normal. The maximum, 85° on the 3d, is 3° below the highest of record. The minimum, 39° on the 13th, is 10° above the lowest of record. Light frost formed in the vicinity on the 8th and 9th, and heavy frost on the 19th. Precipitation, 3.17 inches is 0.54 inch less than normal. There were 14 rainy days, one less than the greatest number of record. There were 6 other days with only a trace of rain, which, included, gives the *greatest of record*. Thunderstorms occurred on the 6th, 11th and 16th. Dense fog was observed on 7 days. Cloudiness was excessive, and sunshine unusually deficient. The total wind movement, 10,706 miles, is the *lowest of record* for the present exposure. Gales were not unusual, but the prevailing direction, *east, is abnormal*.

*November*—Mean temperature, 44.4°, is 0.4° above normal. The maximum, 70° on the 1st, is only 4° below the highest of record. The minimum, 26° on the 20th, is high. Precipitation 3.33 inches, is 0.11 inch below normal. There were 13 *rainy days*, the greatest number since 1897. *The first snow* of the winter, trace, and the only snow in November occurred on the 19th. *The first killing frost* occurred on the 14th. The total wind movement, 14,254 miles, is moderately high. Gales occurred on 12 days. The maximum, 61 nw., occurred on the 6th. The percentage of sunshine, 48, is the *lowest since 1902*. Unusually *high tides* occurred from the 7th to 11th.

*December*—Mean temperature, 30.0°, is 4.4° below normal. *Only six Decembers* since 1871 were *colder*. The maximum temperature, 60°, is not

## ANNUAL METEOROLOGICAL SUMMARY

unusual. *The minimum*, zero on the 18th, is *noteworthy*, because there is but one earlier occurrence of zero weather on record. The monthly range, 60°, is *the greatest of record*. The number of days with temperature not above freezing (12) is twice the December average. The precipitation, 2.53 inches, is 0.92 inch below normal; 1.97 inches was rain. Precipitation after the 15th was all snow, 7.9 inches, and the ground remained snow-covered during that period. Excepting the 11th, rain or snow fell daily from the 6th to the 17th inclusive. Winds of gale force occurred on 12 days. The number of cloudy days, 17, has been *exceeded but twice* since 1871.

### MISCELLANEOUS DATA FOR 1919

*Barometric Pressure* (reduced to sea level)—Mean, 30.04 inches; highest, 30.83 inches, March 15; lowest, 29.27 inches, February 15.

*Temperature*—Greatest daily range, 36°, December 14; least daily range, 4°, July 20.

Greatest monthly range, 60°, December; least monthly range, 33°, August.

Highest mean of three consecutive days, 87°, July 3-5; lowest mean of three consecutive days, 12°, December 16-18.

*Precipitation*—Longest period without a measurable amount of precipitation (0.01 inch or more), 11 days, May 26-June 5 and November 14-24.

Greatest number of consecutive days with precipitation (0.01 inch or more), 6, July 18-23 and November 25-30.

*Snow*—Greatest amount in 24 hours, 2.0 inches, December 24-25.

Greatest depth of snow on the ground, measured at 8 p. m., 1.9 inches, December 19.

Last snow in Spring occurred April 26; first snow in Autumn occurred November 19.

*Frost*—In Spring: last killing frost occurred April 25; last light frost occurred April 26.

In Autumn: first light frost occurred October 8; first killing frost occurred November 14.

*Thunderstorms*—First, April 15; last, October 16.

*Auroras*—None.

*Hail*—June 20; July 26.

# ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

## ANNUAL METEOROLOGICAL WHITEHALL BUILDING, 17 BATTERY PLACE,

Month.	Temperature.*							Precipitation.**				Rel. Hum. [Percent.]		
	Mean.			Extremes.				Total.	Maximum in 24 hours.	Date.	Snowfall.	8 A. M. \$	12 Noon. \$	8 P. M. \$
	Maximum.	Minimum.	Monthly.	Maximum.	Date.	Minimum.	Date.							
January.....	42	28	35	60	1	9	10	3.35	1.33	2-3	0.3	67	59	64
February.....	41	28	35	51	25	16	11	3.45	1.28	25-26	0.7	64	55	60
March.....	50	34	42	65	21	22	28	4.69	1.59	27-28	1.9	67	54	59
April.....	57	40	49	76	7	21	1	2.55	1.30	16-17	T.	62	50	56
May.....	69	53	61	90	29	42	10	3.81	1.09	9-10	0.0	67	53	63
June.....	78	62	70	92	4	52	29	2.23	0.95	27	0.0	72	59	71
July.....	81	67	74	98	4	58	1	7.93	3.27	19-20	0.0	72	60	72
August.....	77	63	70	89	24	56	14	7.74	2.39	17-18	0.0	78	63	70
September....	74	59	66	91	8	51	27	3.60	2.27	22-23	0.0	79	62	73
October.....	66	51	58	85	3	39	13	3.17	0.83	11-12	0.0	81	70	74
November....	52	37	44	70	1	26	20	3.33	0.69	12-13	T.	72	61	68
December....	37	23	30	60	13	0	18	2.53	1.03	9-10	7.9	74	62	64
Year.....	60	46	53	98	Jul. 4	0	Dec. 18	48.38	3.27	July 19-20	10.8	71	59	66

Elevation of Instruments (feet): \*414; \*\*407; †454.

‡Daylight hours only.

## ANNUAL METEOROLOGICAL SUMMARY

## SUMMARY.

NEW YORK, N. Y.—YEAR, 1919.

Sun- shine.		Average cloudiness† [Scale of 0 to 10].	Wind.†					Number of Days.												
Number of Hours.	Percent. of Possible.		Average hourly velocity.	Prevailing direction.	Maximum.			Winds 40 or more miles per hour.	Clear.†	Partly cloudy.†	Cloudy.†	Precipitation [0.1 in. or more].	Thunderstorms.	Dense fog.	Snow [0.1 in. or more].	Max. Temp.		Min. Temp.		
					Velocity.	Direction.	Date.									32 degrees and below.	90 degrees and above.	32 degrees and below.	Zero and below.	
148	50	6.3	18.7	nw	84	nw	24	14	9	8	14	7	0	2	1	5	0	18	0	
182	61	5.2	19.8	nw	66	nw	26	10	12	4	12	11	0	2	4	0	0	19	0	
203	55	6.7	24.1	nw	92	nw	28	18	6	9	16	12	0	1	3	1	0	10	0	
242	60	6.5	19.1	nw	62	nw	24	12	5	13	12	11	2	1	0	0	0	4	0	
253	56	6.4	15.3	e	55	nw	5	4	9	6	16	12	4	4	0	0	1	0	0	
318	70	5.3	12.0	s	48	n	20	2	10	11	9	6	2	3	0	0	3	0	0	
298	65	6.1	14.8	s	65	sw	26	6	8	12	11	14	5	3	0	0	4	0	0	
270	63	5.9	14.3	nw	40	ne	14	2	7	13	11	11	4	0	0	0	0	0	0	
220	59	5.6	13.8	nw	49	nw	12	3	9	10	11	8	1	4	0	0	1	0	0	
150	44	7.2	14.4	e	63	w	28	4	6	9	16	14	3	7	0	0	0	0	0	
142	48	6.5	19.8	nw	61	nw	6	12	7	9	14	13	0	2	0	0	0	6	0	
117	41	7.2	17.2	nw	72	nw	10	12	5	9	17	14	0	5	7	12	0	27	1	
2,543	56	6.2	16.9	nw	92	nw	Mar. 28	99	93	113	159	133	21	34	15	18	9	84	1	

§ Normal standard time.

## ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

NORMAL AND  
BASED ON RECORDS

Month.	Temperature.							Precipitation.				Rel. Hum. Per Cent.		Sunshine.			
	Maximum.	Minimum.	Mean.	Highest Mean.	Lowest Mean.	Daily Range.	Daily Variability.	Monthly.	Greatest Monthly.	Least Monthly.	Snowfall.	8 A. M.	8 P. M.	Number of Hours.	Possible.	Per Cent. of Possible.	Cloudiness.* [Scale 0 to 10.]
January.....	38	24	30	40	22	14	6	3.79	6.15	1.08	8.7	76	71	152	298	51	6.0
February.....	38	24	31	40	23	14	6	3.74	7.81	0.82	10.3	73	68	184	298	61	5.5
March.....	45	31	38	48	29	14	5	4.10	7.90	0.86	7.6	73	67	209	371	56	5.8
April.....	57	41	48	54	41	16	5	3.30	7.02	1.00	0.8	70	65	238	400	59	5.6
May.....	68	52	59	65	53	16	4	3.18	9.10	0.33	0.0	72	66	268	449	60	5.7
June.....	77	61	68	72	64	16	4	3.26	7.70	0.86	0.0	74	69	284	452	63	5.3
July.....	82	67	74	78	70	16	3	4.54	9.63	0.23	0.0	75	69	287	458	63	5.4
August.....	80	66	72	77	69	14	3	4.53	10.42	0.59	0.0	77	71	260	427	61	5.5
September.....	74	60	66	72	61	14	4	3.59	14.51	0.15	0.0	78	72	231	374	62	4.9
October.....	63	49	56	61	50	14	4	3.71	11.55	0.58	T.	76	69	203	344	58	5.0
November.....	51	38	44	50	37	13	5	3.44	9.82	0.68	1.2	75	69	163	297	55	5.6
December.....	41	28	34	42	25	13	5	3.45	6.66	0.95	6.6	75	70	147	287	51	5.8
Year.....	60	45	52	54	49	14	4	44.63	58.68	33.17	35.2	74	69	2,626	4,455	58	5.5

\*Daylight hours only.



# ANNUAL METEOROLOGICAL SUMMARY

## COMPARATIVE DATA. OF 20 TO 49 YEARS.

Wind.		Number of Days.																	
Hourly Velocity.	Prevailing Direction.	Winds 40 Miles or More per Hour.	Clear.* [Scale 0 to 3.]			Partly Cloudy.* [Scale 4 to 7.]	Cloudy.* [Scale 8 to 10]			Precipitation. [.01 or More.]			Thunderstorms.	Dense Fog.	Snow.	Max. Temp.		Min. Temp.	
			Average.	Greatest.	Least.		Average.	Greatest.	Least.	Average.	Greatest.	Least.				32 Degrees and Below.	90 Degrees and Above.	32 Degrees and Below.	Zero and Below.
13	nw	6	8	14	3	11	12	19	7	12	21	4	+	4	6	9	0	24	+
14	nw	8	8	14	1	10	10	17	3	10	19	4	+	3	5	8	0	22	+
13	nw	7	8	15	2	12	11	17	4	15	20	5	1	3	4	0	0	17	0
13	nw	6	9	15	1	11	10	21	5	11	16	4	2	3	1	0	†	3	0
11	nw	3	9	17	1	12	10	18	4	11	21	5	3	3	0	†	†	0	0
10	sw	3	9	18	2	14	7	20	2	10	17	4	5	1	0	0	1	0	0
9	s	2	9	15	2	14	2	19	2	12	19	3	7	1	0	0	3	0	0
9	s	1	9	17	2	13	9	16	3	10	17	4	5	†	0	0	1	0	0
10	w	2	11	20	2	10	9	17	1	9	17	2	2	1	0	0	1	0	0
12	nw	4	11	19	2	10	10	17	3	9	15	3	1	2	0	0	0	†	0
13	nw	6	9	17	2	10	11	18	5	9	17	3	†	2	1	1	0	7	0
13	nw	6	8	15	3	11	12	19	3	10	18	4	†	3	4	6	0	20	†
12	nw	53	108	138	65	138	119	159	73	128	152	106	27	24	21	26	7	95	1

†Less than one.

## ANNUAL REPORT OF THE DEPARTMENT OF HEALTH

## DAILY PRECIPITATION—1919.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1.....	.49	....	.80	T.	.77	....	....	1.07	.04	.23	.50	....
2.....	1.06	....	....	T.	....	....	....	.30	.18	.09	....	....
3.....	.38	....	....	....	....	....	....	.37	....	....	....	....
4.....	T.	.09	....	.01	....	....	....	T.	T.	.30	....	....
5.....	....	....	.20	.14	.01	....	....	T.	....	T.	.31	....
6.....	T.	....	.02	....	T.	.08	.43	.58	....	.25	....	.24
7.....	T.	....	T.	....	.38	T.	....	....	....	....	....	.06
8.....	.06	.06	....	.10	....	.09	....	....	....	....	....	.06
9.....	T.	T.	.77	....	.28	.15	....	....	T.	.05	....	.42
10.....	....	....	....	....	.93	....	.45	....	.02	....	....	.69
11.....	....	....	T.	.62	.03	T.	....	....	.55	.36	.03	....
12.....	....	T.	....	.08	T.	....	....	....	.05	.47	.12	.20
13.....	....	.07	....	.03	....	....	.09	.85	....	....	.64	.06
14.....	T.	.82	.05	....	....	....	....	.64	....	.78	....	.24
15.....	....	.32	.05	.07	T.	....	T.	1.33	T.	T.	....	T.
16.....	....	....	.30	1.28	....	....	.25	....	....	.22	....	.01
17.....	T.	....	....	.02	.60	....	T.	.38	....	....	....	.06
18.....	.09	.05	.11	.01	....	....	.75	2.12	....	....	....	....
19.....	....	....	.73	....	....	....	2.53	.01	....	....	T.	.12
20.....	....	....	.01	T.	T.	.77	1.57	....	T.	....	....	....
21.....	....	.15	....	....	.14	....	.04	T.	....	T.	....	T.
22.....	T.	.03	....	....	.11	....	.87	....	.42	.07	....	....
23.....	1.26	.58	....	....	.29	....	.63	....	1.85	.28	T.	....
24.....	.01	....	....	.19	.26	....	....	....	....	....	....	.24
25.....	....	.61	....	T.	.01	....	....	.49	....	T.	.06	.01
26.....	....	.67	....	T.	....	.19	.15	T.	....	T.	.64	....
27.....	....	....	1.34	....	....	.95	.06	.04	....	.06	.01	....
28.....	T.	T.	.31	T.	....	....	.06	....	....	.03	.01	....
29.....	T.	....	....	....	....	....	....	....	....	....	.11	....
30.....	....	....	....	....	....	....	....	.23	....	.16	.51	.12
31.....	....	....	....	....	....	....	.05	T.	....	.03	....	....
Total.....	3.35	3.45	4.69	2.55	3.81	2.23	7.93	7.74	3.60	3.17	3.33	2.53

"T", trace, less than .01 inch.

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